


# Invitation to Bid

<b>LSUNO Auxillary</b>			BIDS WILL BE PUBLICLY OPENED:	
VENDOR NO. : SOLICITATION : <b>000332</b> OPENING DATE : <b>05/14/2010</b>			<b>May 14,2010</b>	<b>02:00 PM</b>
Rebid of #000319-Wiring Bid		Return Bid in Envelope/Labels Provided to: Purchasing Department 433 Bolivar St Room 623 New Orleans LA 70112		
		BUYER : Long, Lori BUYER PHONE : 504/568-4715 DATE ISSUED : 04/16/2010 REQ. NO : FISCAL YEAR : 0		
INSTRUCTIONS TO BIDDERS				
<p>1. READ THE ENTIRE BID, INCLUDING ALL TERMS AND CONDITIONS AND SPECIFICATIONS.</p> <p>2. FILL IN ALL BLANK SPACES.</p> <p>3. ALL BID PRICES MUST BE TYPED OR WRITTEN IN INK. ANY CORRECTIONS, ERASURES OR OTHER FORMS OF ALTERATION TO UNIT PRICES SHOULD BE INITIALIZED BY THE BIDDER.</p> <p>4. BID PRICES SHALL INCLUDE DELIVERY OF ALL ITEMS F.O.B. DESTINATION OR AS OTHERWISE PROVIDED. BIDS CONTAINING "PAYMENT IN ADVANCE" OR "C.O.D." REQUIREMENTS MAY BE REJECTED. PAYMENT IS TO BE MADE WITHIN 30 DAYS AFTER RECEIPT OF PROPERLY EXECUTED INVOICE OR DELIVERY, WHICHEVER IS LATER.</p> <p>5. SPECIFY YOUR PAYMENT TERMS: _____ . CASH DISCOUNTS FOR LESS THAN 30 DAYS OR LESS THAN 1% WILL BE ACCEPTED, BUT WILL NOT BE CONSIDERED IN DETERMINING AWARDS</p>				
BY SIGNING THIS BID, THE BIDDER CERTIFIES:				
<p>* THAT NEITHER THIS BUSINESS ENTITY NOR ANY OF ITS EMPLOYEES OR SUBCONTRACTORS IS CURRENTLY LISTED AS EXCLUDED OR SANCTIONED BY EITHER THE DEPARTMENT OF HEALTH AND HUMAN SERVICES, OFFICE OF INSPECTOR GENERAL (OIG) OR THE GENERAL SERVICES ADMINISTRATION (GSA).</p> <p>* THAT IF THIS BUSINESS ENTITY OR ANY OF ITS EMPLOYEES OR SUBCONTRACTORS APPEAR ON EITHER LISTING, MY BID WILL BE REJECTED.</p> <p>* THAT IF AT ANY TIME DURING THE TERM OF THE CONTRACT AWARDED AS A RESULT OF THIS INVITATION TO BID, THIS ENTITY OR ANY OF ITS EMPLOYEES OR SUBCONTRACTORS APPEARS ON EITHER LISTING, MY COMPANY WILL NOTIFY THE CONTRACTING AGENCY, AND THE CONTRACT WILL BE TERMINATED. THE CONTRACTING AGENCY WILL NOT BE LIABLE FOR ANY DAMAGES RESULTING FROM SAID TERMINATION.</p>				
THE BIDDER FURTHER CERTIFIES:				
<p>* COMPLIANCE WITH ALL INSTRUCTIONS TO BIDDERS, TERMS, CONDITIONS, AND SPECIFICATIONS.</p> <p>* THIS BID IS MADE WITHOUT COLLUSION OR FRAUD.</p> <p>* THAT ALL TAXES DULY ASSESSED BY THE STATE OF LOUISIANA AND IT'S SUBDIVISIONS, INCLUDING FRANCHISE TAXES, PRIVILEGE TAXES, SALES TAXES AND ALL OTHER TAXES FOR WHICH THE FIRM IS LIABLE HAVE BEEN PAID.</p> <p>* THAT IF MY BID IS ACCEPTED WITHIN _____ DAYS FROM BID CLOSING TIME, MY FIRM WILL FURNISH ANY OR ALL OF THE ITEMS (OR SECTIONS) AT THE PRICE OPPOSITE EACH ITEM (OR SECTION).</p> <p>* DELIVERY WILL BE MADE WITHIN _____ DAYS AFTER RECEIPT OF ORDER.</p>				
VENDOR PHONE NUMBER:		TITLE		
FAX NUMBER:		DATE		
SIGNATURE OF AUTHORIZED BIDDER (MUST BE SIGNED)		NAME OF BIDDER (TYPED OR PRINTED)		

# Invitation to Bid

<b>STANDARD TERMS &amp; CONDITIONS</b>	Page 2 of 5
<b>NUMBER : 000332</b> <b>OPEN DATE : 05/14/2010      TIME: 02:00 PM</b>	<b>BIDDER:</b>
<p>6. DESIRED DELIVERY: 10 DAYS ARO, UNLESS SPECIFIED ELSEWHERE</p> <p>7. TO ASSURE CONSIDERATION, ALL BIDS SHOULD BE SUBMITTED IN THE SPECIAL ENVELOPE, OR USE BID LABEL IF FURNISHED FOR THAT PURPOSE. IN THE EVENT YOUR BID CONTAINS BULKY SUBJECT MATERIAL, THE SPECIAL BID ENVELOPE SHOULD BE FIRMLY AFFIXED TO THE MAILING ENVELOPE.</p> <p>8. BIDS SUBMITTED ARE SUBJECT TO PROVISIONS OF THE LAWS OF THE STATE OF LOUISIANA INCLUDING BUT NOT LIMITED TO L.R.S. 39:1551-1736; PURCHASING RULES AND REGULATIONS; EXECUTIVE ORDERS; STANDARD TERMS AND CONDITIONS; SPECIAL CONDITIONS; AND SPECIFICATIONS LISTED IN THIS SOLICITATION.</p> <p>9. IMPORTANT: THIS BID IS TO BE MANUALLY SIGNED IN INK BY A PERSON AUTHORIZED TO BIND THE VENDOR (SEE NO.31).</p> <p>10. INQUIRIES: ADDRESS ALL INQUIRIES AND CORRESPONDENCE TO THE BUYER AT THE PHONE NUMBER AND ADDRESS SHOWN ABOVE.</p> <p>11. BID FORMS: ALL WRITTEN BIDS, UNLESS OTHERWISE PROVIDED FOR, SHOULD BE SUBMITTED ON, AND IN ACCORDANCE WITH FORMS PROVIDED, PROPERLY SIGNED (SEE #31). BIDS MUST BE RECEIVED AT THE ADDRESS SPECIFIED IN THE SOLICITATION PRIOR TO BID OPENING TIME IN ORDER TO BE CONSIDERED.</p> <p>12. STANDARDS OR QUALITY. ANY PRODUCT OR SERVICE BID SHALL CONFORM TO ALL APPLICABLE FEDERAL AND STATE LAWS AND REGULATIONS AND THE SPECIFICATIONS CONTAINED IN THE SOLICITATION. UNLESS OTHERWISE SPECIFIED IN THE SOLICITATION, ANY MANUFACTURER'S NAME, TRADE NAME, BRAND NAME, OR CATALOG NUMBER USED IN THE SPECIFICATION IS FOR THE PURPOSE OF DESCRIBING THE STANDARD OF QUALITY, PERFORMANCE, AND CHARACTERISTICS DESIRED AND IS NOT INTENDED TO LIMIT OR RESTRICT COMPETITION. BIDDER MUST SPECIFY THE BRAND AND MODEL NUMBER OF THE PRODUCT OFFERED IN HIS/HER BID. BIDS NOT SPECIFYING BRAND AND MODEL NUMBER SHALL BE CONSIDERED AS OFFERING THE EXACT PRODUCTS SPECIFIED IN THE SOLICITATION.</p> <p>13. DESCRIPTIVE INFORMATION. BIDDERS PROPOSING AN EQUIVALENT BRAND OR MODEL SHOULD SUBMIT WITH THE BID, INFORMATION (SUCH AS ILLUSTRATIONS, DESCRIPTIVE LITERATURE, TECHNICAL DATA) SUFFICIENT FOR LSUHSC TO EVALUATE QUALITY, SUITABILITY, AND COMPLIANCE WITH THE SPECIFICATIONS IN THE SOLICITATION. FAILURE TO SUBMIT DESCRIPTIVE INFORMATION MAY CAUSE BID TO BE REJECTED. ANY CHANGE MADE TO A MANUFACTURER'S PUBLISHED SPECIFICATION SUBMITTED FOR A PRODUCT SHALL BE VERIFIABLE BY THE MANUFACTURER. IF ITEM(S) BID DO NOT FULLY COMPLY WITH SPECIFICATIONS (INCLUDING BRAND AND/OR PRODUCT NUMBER), BIDDER MUST STATE IN WHAT RESPECT ITEMS(S) DEVIATE. FAILURE TO NOTE EXCEPTIONS ON THE BID FORM WILL NOT RELIEVE THE SUCCESSFUL BIDDER(S) FROM SUPPLYING THE ACTUAL PRODUCTS REQUESTED.</p> <p>14. BID OPENING. BIDDERS MAY ATTEND THE BID OPENING, BUT NO INFORMATION OR OPINIONS CONCERNING THE ULTIMATE CONTRACT AWARD WILL BE GIVEN AT THE BID OPENING OR DURING THE EVALUATION PROCESS. BIDS MAY BE EXAMINED WITHIN 72 HOURS AFTER BID OPENING. INFORMATION PERTAINING TO COMPLETED FILES MAY BE SECURED BY VISITING LSUHSC DURING NORMAL WORKING HOURS. WRITTEN BID TABULATIONS WILL NOT BE FURNISHED.</p> <p>15. AWARDS. AWARD WILL BE MADE TO THE LOWEST RESPONSIBLE AND RESPONSIVE BIDDER. LSUHSC RESERVES THE RIGHT TO AWARD ITEMS SEPARATELY, GROUP, OR IN TOTAL, AND TO REJECT ANY OR ALL BIDS AND WAIVE ANY INFORMALITIES.</p> <p>16. PRICES. UNLESS OTHERWISE SPECIFIED BY LSUHSC IN THE SOLICITATION, BID PRICES MUST BE COMPLETE, INCLUDING TRANSPORTATION PREPAID BY BIDDER TO DESTINATION AND FIRM FOR ACCEPTANCE FOR A MINIMUM OF 30 DAYS. IF ACCEPTED, PRICES MUST BE FIRM FOR THE CONTRACTUAL PERIOD. BIDS OTHER THAN F.O.B. DESTINATION MAY BE REJECTED. PRICES SHOULD BE QUOTED IN THE UNIT (EACH,</p>	

# Invitation to Bid

<b>STANDARD TERMS &amp; CONDITIONS</b>	Page 3 of 5
<b>NUMBER : 000332</b> <b>OPEN DATE : 05/14/2010      TIME: 02:00 PM</b>	<b>BIDDER:</b>
<p>BOX, CASE, ETC.) AS SPECIFIED IN THE SOLICITATION.</p> <p>17.DELIVERIES. BIDS MAY BE REJECTED IF THE DELIVERY TIME INDICATED IS LONGER THAN THAT SPECIFIED IN THE SOLICITATION.</p> <p>18.TAXES. VENDOR IS RESPONSIBLE FOR INCLUDING ALL APPLICABLE TAXES IN THE BID PRICE. LSUHSC AGENCIES ARE EXEMPT FROM ALL STATE AND LOCAL SALES AND USE TAXES.</p> <p>19.NEW PRODUCTS. UNLESS SPECIFICALLY CALLED FOR IN THE SOLICITATION, ALL PRODUCTS FOR PURCHASE MUST BE NEW, NEVER PREVIOUSLY USED, AND THE CURRENT MODEL AND/OR PACKAGING. NO REMANUFACTURED, DEMONSTRATOR, USED OR IRREGULAR PRODUCT WILL BE CONSIDERED FOR PURCHASE UNLESS OTHERWISE SPECIFIED IN THE SOLICITATION. THE MANUFACTURER'S STANDARD WARRANTY WILL APPLY UNLESS OTHERWISE SPECIFIED IN THE SOLICITATION.</p> <p>20.CONTRACT CANCELLATION. THE STATE OF LOUISIANA HAS THE RIGHT TO CANCEL ANY CONTRACT, IN ACCORDANCE WITH PURCHASING RULES AND REGULATIONS, FOR CAUSE INCLUDING BUT NOT LIMITED TO THE FOLLOWING: (1) FAILURE TO DELIVER WITHIN THE TIME SPECIFIED IN THE CONTRACT; (2) FAILURE OF THE PRODUCT OR SERVICE TO MEET SPECIFICATIONS, CONFORM TO SAMPLE QUALITY OR TO BE DELIVERED IN GOOD CONDITION; (3) MISREPRESENTATION BY THE CONTRACTOR; (4) FRAUD, COLLUSION CONSPIRACY OR OTHER UNLAWFUL MEANS OF OBTAINING ANY CONTRACT WITH THE STATE; (5) CONFLICT OF CONTRACT PROVISIONS WITH CONSTITUTIONAL OR STATUTORY PROVISIONS OF STATE OR FEDERAL LAW; (6) ANY OTHER BREACH OF CONTRACT.</p> <p>21.DEFAULT OF CONTRACT. FAILURE TO DELIVER WITHIN THE TIME SPECIFIED IN THE BID WILL CONSTITUTE A DEFAULT AND MAY CAUSE CANCELLATION OF THE CONTRACT. WHERE THE UNIVERSITY HAS DETERMINED THE CONTRACTOR TO BE IN DEFAULT, THE UNIVERSITY RESERVES THE RIGHT TO PURCHASE AN OR ALL PRODUCTS OR SERVICES COVERED BY THE CONTRACT ON THE OPEN MARKET AND TO CHARGE THE CONTRACTOR WITH COST IN EXCESS OF THE CONTRACT PRICE. UNTIL SUCH ASSESSED CHARGES HAVE BEEN PAID, NO SUBSEQUENT BID FROM THE DEFAULTING CONTRACTOR WILL BE CONSIDERED.</p> <p>22.ORDER OF PRIORITY. IN THE EVENT THERE IS A CONFLICT BETWEEN THE INSTRUCTIONS TO BIDDERS OR STANDARD CONDITIONS AND THE SPEICAL CONDITIONS, THE SPECIAL CONDITIONS SHALL GOVERN.</p> <p>23.APPLICABLE LAW. ALL CONTRACTS SHALL BE CONSTRUED IN ACCORDANCE WITH AND GOVERNED BY THE LAWS OF THE STATE OF LOUISIANA.</p> <p>24.EQUAL OPPORTUNITY. BY SUBMITTING AND SIGNING THIS BID, BIDDER AGREES THAT HE/SHE WILL NOT DISCRIMINATE IN THE RENDERING OF SERVICES TO AND/OR EMPLOYMENT OF INDIVIDUALS BECAUSE OF RACE, COLOR, RELIGION, SEX, AGE, NATIONAL ORIGIN, HANDICAP, DISABILITY, VETERAN STATUS, OR A OTHER NON-MERIT FACTOR.</p> <p>25.SPECIAL ACCOMMODATIONS. ANY "QUALIFIED INDIVIDUAL WITH DISABILITY" AS DEFINED BY THE AMERICANS WITH DISABILITIES ACT WHO HAS SUBMITTED A BID AND DESIRES TO ATTEND THE BID OPENING, MUST NOTIFY THIS OFFICE IN WRITING NOT LATER THAN SEVEN DAYS PRIOR TO THE BID OPENING DATE OF THEIR NEED FOR SPECIAL ACCOMMODATIONS. IF THE REQUEST CANNOT BE REASONABLY PROVIDED, THE INDIVIDUAL WILL BE INFORMED PRIOR TO THE BID OPENING.</p> <p>26.IDEMNITY. CONTRACTOR AGREES, UPON RECEIPT OF WRITTEN NOTICE OF A CLAIM OR ACTION, TO DEFEND THE CLAIM OR ACTION, OR TAKE OTHER APPROPRIATE MEASURE, TO IDEMNIFY, AND HOLD HARMLESS, LSUHSC, ITS OFFICERS, ITS AGENTS AND ITS EMPLOYEES FROM AND AGAINST ALL CLAIMS AND ACTIONS FOR BODILY INJURY, DEATH OR PROPERTY DAMAGES CAUSED BY THE FAULT OF THE CONTRACTOR,</p>	

# Invitation to Bid

<b>STANDARD TERMS &amp; CONDITIONS</b>	Page 4 of 5
NUMBER : 000332 OPEN DATE : 05/14/2010      TIME: 02:00 PM	<b>BIDDER:</b>

OFFICERS, ITS AGENTS, OR ITS EMPLOYEES. CONTRACTOR IS OBLIGATED TO INDEMNIFY ONLY TO THE EXTENT OF THE FAULT OF THE CONTRACTOR, ITS OFFICERS, ITS AGENTS, OR ITS EMPLOYEES. HOWEVER, THE CONTRACTOR SHALL HAVE NO OBLIGATION AS SET FORTH ABOVE WITH RESPECT TO ANY CLAIM OR ACTION FROM BODILY INJURY, DEATH OR PROPERTY DAMAGES ARISING OUT OF THE FAULT OF THE UNIVERSITY, ITS OFFICERS, ITS AGENTS OR ITS EMPLOYEES.

27. INTERPRETATION OF DOCUMENT: ANY INTERPRETATION OF THE BID OR QUOTATION DOCUMENT WILL ONLY BE MADE BY AN ADDENDUM ISSUED IN WRITING BY THE PURCHASING DEPARTMENT. SUCH ADDENDUM WILL BE MAILED OR DELIVERED TO EACH PERSON RECEIVING A SET OF THE ORIGINAL BID OR QUOTATION DOCUMENTS. LSUHSC WILL NOT BE RESPONSIBLE FOR ANY OTHER EXPLANATION OR INTERPRETATION OF THE DOCUMENTS.

28. ACCEPTANCE OF BID: ONLY THE ISSUANCE OF A PURCHASE ORDER OR A SIGNED CONTRACT CONSTITUTES ACCEPTANCE ON THE PART OF LSUHSC.

29. ADHERENCE TO JCAHO STANDARDS: WHERE APPLICABLE, LSUHSC IS ACCREDITED BY THE JOINT COMMISSION ON ACCREDITATION OF HEALTHCARE ORGANIZATIONS AND AS SUCH ALL CONTRACTORS, SUBCONTRACTORS, AND VENDORS AGREE TO ADHERE TO THE APPLICABLE STANDARDS PROMULGATED BY THE COMMISSION.

30. PREFERENCE: IN ACCORDANCE WITH LOUISIANA REVISED STATUTES 39:1595, A PREFERENCE MAY BE ALLOWED FOR PRODUCTS MANUFACTURED, PRODUCED, GROWN, OR ASSEMBLED IN LOUISIANA OF EQUAL QUALITY. DO YOU CLAIM THIS PREFERENCE?    YES \_\_\_\_\_ NO \_\_\_\_\_  
 SPECIFY THE LINE NUMBER (S) \_\_\_\_\_  
 SPECIFY LOCATION WITHIN LOUISIANA WHERE THIS PRODUCT IS MANUFACTURED, PRODUCED, GROWN OR ASSEMBLED \_\_\_\_\_  
 (NOTE: IF MORE SPACE IS REQUIRED, INCLUDE ON SEPARATE SHEET.)  
 DO YOU HAVE A LOUISIANA BUSINESS WORK FORCE?    YES \_\_\_\_\_ NO \_\_\_\_\_  
 IF SO, DO YOU CERTIFY THAT AT LEAST FIFTY PERCENT (50%) OF YOUR LOUISIANA WORKFORCE IS COMPRISED OF LOUISIANA RESIDENTS?  
       YES \_\_\_\_\_ NO \_\_\_\_\_  
 FAILURE TO SPECIFY ABOVE INFORMATION MAY CAUSE ELIMINATION FROM PREFERENCES.  
 PREFERENCES SHALL NOT APPLY TO SERVICE CONTRACTS.

31. SIGNATURE AUTHORITY. IN ACCORDANCE WITH L.R.S. 39:1594 (ACT 121), THE PERSON SIGNING THE BID MUST BE:

31.1. A CURRENT CORPORATE OFFICER, PARTNERSHIP MEMBER OR OTHER INDIVIDUAL SPECIFICALLY AUTHORIZED TO SUBMIT A BID AS REFLECTED IN THE APPROPRIATE RECORDS ON FILE WITH THE SECRETARY OF STATE; OR

31.2. AN INDIVIDUAL AUTHORIZED TO BIND THE VENDOR AS REFLECTED BY AN ACCOMPANYING CORPORATE RESOLUTION, CERTIFICATE OR AFFIDAVIT; OR

31.3. AN INDIVIDUAL LISTED ON THE STATE OF LOUISIANA BIDDER'S APPLICATION AS AUTHORIZED TO EXECUTE BIDS. BY SIGNING THE BID, THE BIDDER CERTIFIES COMPLIANCE WITH THE ABOVE.

# Invitation to Bid

PRICE SHEET		Page 5 of 5			
NUMBER : 000332		BIDDER:			
OPEN DATE : 05/14/2010		TIME: 02:00 PM			
<p>UNLESS SPECIFIED ELSEWHERE SHIP TO:</p> <p>ATTN: David Frentz 1901 Perdido St Rom 3224 New Orleans LA 70112</p>					
Line No.	Description			Unit Price	Extended Amount
1	<p>TELECOMMUNICATIONS AND NETWORK WIRING SERVICE, SUPPORT AND MATERIALS. SEE ATTACHMENTS LISTED IN COMMENTS. RE-BID OF ORIGINAL LSUHSC BID #000319</p> <p>Specify brand, model bid(if applicable)</p> <p>Network Wiring Support Bid 2010Final ITB * SCHEDULE A - 2010 Network Support Bid, Services Price Schedule, * SCHEDULE B - ESTIMATED MATERIALS USAGE,* EXHIBIT A - 2010 Network Wiring Support Bid,Sample Jobs,* Exhibit B - Examples of Wiring Installations Network Wiring Support Bid 2010Final * EXHIBIT C - WiringSpec * EXHIBIT D - Network Infrastructure Addendum and Exhibit A &amp; D (Insurance &amp; Indemnification)</p>	1.00	LOT		

LSU Health Sciences Center  
Auxiliary Enterprises  
Network Wiring

INVITATION TO BID

Telecommunications and Network Wiring Service, Support and Materials

BID SPECIFICATIONS  
PER ATTACHMENTS

LSU HEALTH SCIENCES CENTER BID NUMBER 000332

Any questions should be directed to Lori Long, LSUHSC, Purchasing Manager, 568-4715.

## SUMMARY

This bid is for cabling infrastructure installation, support services, materials and supporting warranties for the LSUHSC Academic Campuses, Hospitals, Clinics, and associated state agencies throughout Louisiana. Prospective vendors will provide pricing for labor and materials for each line item on Schedule A and B. Five (5) sample project descriptions representative of the size and scope of work expected will be provided for vendor review (Exhibit A). Sample projects are for reference only and are not associated with any actual work to be performed. The contract awarded will be for an initial duration of twelve (12) months . Up to four (4) renewals for additional twelve (12) month periods will be considered (maximum of sixty (60) consecutive months). At each renewal opportunity, both LSUHSC and the current vendor must agree that all terms and conditions will remain the same.

If there is any change to the terms and conditions from the original purchase order, then LSUHSC must re-bid the Telecommunications and Network Wiring Service, Support and Materials contract. A new solicitation will be created and all prospective vendors will be given the opportunity to compete for LSUHSC-NO telecommunications and network wiring installation and service business. The University reserves the right to award all or none. LSUHSC reserves the right to purchase and provide any and all materials for work performed under this contract. The successful bidder must have staff certified in the use of Panduit, SpecSeal Firestop products, EZ Path Fire Rated Pathway, Belden, and Corning materials to provide the required services as outlined in this bid.

Only organizations which have been in the telecommunications and network wiring business at least five (5) years will be considered. The University reserves the right to reject any and all bids at its discretion. After the contract has been awarded, no changes will be made to any part of the contract without written approval from Rob Parker, Director of Purchasing, or his designee. Mr. Parker can be reached at (504)568-4814.

The successful bidder will be required to coordinate through the Auxiliary Enterprises (AE) Network Installation Coordinator for network installation related requests with LSUHSC Enterprise Network Group, individual PC Supporters, IT Supporters, facility managers and users to provide the following materials and services:

**Materials** – To ensure quality, many of the materials will be brand and item specific as described later in this bid.

- Cable, both copper and fiber-optic, including patch cables.
- Equipment used to establish paths and protect cable, such as trays, support devices (example: J-hooks), conduit, inner-duct, etc.
- Equipment to build telecommunication and data, main and intermediate closets including racks, cabinets, ladders, cable management, patching devices, termination equipment, etc.
- Firewall penetration sealants and pathways.
- Labels for racks and cables.
- Various antennas and associated equipment to mount and install the same.

**Services** – Minimum standards have been established for network installation workmanship and configuration to ensure quality. Refer to the attached document "*Network Cabling Infrastructure, Design and Installation Standards*" (Exhibit C).

Services shall include the following:

- Preparing estimates.
- Preparing cable routes, Hand Dig and Install Hand Hole
- External trenching and directional boring.
- Making penetrations and testing of floors or walls that will be penetrated to ensure no utility or structural components of the building will be damaged or otherwise compromised.
- Sealing penetrations per State and Local codes and LSUHSC and facility requirements.
- Installing cable trays, hooks, conduit, inner-duct or other acceptable means of routing or protecting cable.
- Testing components and equipment installations.
- Pulling copper and fiber-optic cable, including horizontal, vertical and backbone.
- Terminating cables, both copper and fiber-optic.
- Installing wall plates and cables from the wall plate to each computer.
- Installing A/V equipment, Including but not limited to projector screens, speakers, televisions and A/V cables
- Installing cabinets, racks, electronic equipment furnished by LSUHSC, patch panels, cable management, ladders, and any other related telecommunications equipment in telecommunications closets.
- Patching all cables in closets.
- Testing all cables.
- Labeling all cables, patch panels and other termination points per attached requirements.
- Mapping jacks and ports.
- Trouble-shooting cable infrastructure problems.
- Fusion splicing fiber-optic cable.
- Remove data cable
- Move existing drop, excluding labels, terminations, etc.
- Ground Rack (existing building ground)
- Install Antenna Mast

## GENERAL

The use of the word "vendor" or "contractor" shall be interpreted to be the firm or corporation who has been awarded a contract by the department. The contract will be administered by a representative of LSUHSC's Department of Auxiliary Enterprises, hereafter denoted by the term "department."

Installation or maintenance of the network infrastructure often involves several groups with specific roles in the process. Those include the Office of Computer Services (OCS), Facilities Management, Departmental Computer Support, and Auxiliary Enterprises. Each will often have a direct role in the planning, implementation and review of network installations.

LSUHSC Office of Computer Services provides oversight for the design, maintenance, and support of the academic campus in New Orleans, the LSU Interim Hospital, and seven additional state owned and operated hospitals throughout Louisiana, listed below. OCS establishes networking standards, designs, budgets and oversight for the network infrastructure. They also house, maintain and support servers and other centralized equipment and services.



Facilities Management at individual sites has specific requirements for contractors or in-house service agencies as it relates to services provided on site. This takes the form of sign-in, distribution of identification badges, permits to work in the facility that describe the work being performed, location, and duration. Other documentation is often required depending on the type of work being performed. "Fire Wall Penetration Permits" must be completed before starting any work that will require any penetrations in the facility regardless of size, type, or number.

Division, School or Hospital PC/IT Support Staff provide end-user and departmental level support for all computer related needs in each facility. They are typically the source of the need and funding for services. As a need is identified, the PC/IT Support Staff works directly with AE Network Wiring to request the services if the job is small (ports are available). If the job is sufficiently large that it requires planning, they or their administration requests the service directly from OCS. OCS then researches, plans, budgets, and requests the services and materials. OCS approves all network design plans. If the requestor of the service is agreeable with the plan, all parties must agree on a time line. The PC/IT Support Staff also provides oversight during implementation and must approve the completed project.

Auxiliary Enterprises, Network Wiring will coordinate activities of the contractor, acting as a point of contact between the contractor and LSUHSC. As requests for services are received, the Network Wiring Installation Coordinator will record the request and arrange for site surveys with OCS, Facilities, PC/IT Support, and/or departmental staff as necessary to establish requirements and specifications. The Network Wiring Installation Coordinator will then coordinate the scheduling of the work with all involved parties. Once the project is complete, the Network Wiring Installation Coordinator, PC/IT Support Staff and if necessary OCS will inspect the project.

The contractor must meet or exceed the following requirements:

- The contractor must have been in continuous operation for a period of 5 years or more as a telephone and network wiring installer in the United States. Federal or State tax forms, occupational licenses or similar forms of proof shall be adequate for this provision and must be presented prior to the bid opening.
- The contractor shall be a licensed commercial contractor in the state of Louisiana with the classification of Specialty: Telecommunications and Specialty: Fiber Optic Cable Splicing. A general electrical license will not be considered acceptable. All bidders must be qualified under the Contractor's Licensing Law, Title 37 Louisiana Revised Statutes, where the cost of work is Fifty Thousand Dollars (\$50,000) or more. Proper licensure will be verified by the University. All proposals submitted by bidders without the required and verifiable licenses will be rejected.
- The contractor shall have a minimum of two (2) employees who are RCDD (Registered Communications Distribution Designer) certified and in good standing at the time of the bid opening. A copy of each individual's RCDD certificate must be provided with the bid documents at the time of bid opening as proof of RCDD qualification. Failure to provide this evidence with bid documents is grounds for rejection of bid from further consideration. This individual must be available for site surveys as required throughout the term of the contract.
- The contractor and its technicians must be factory certified on the following products. Letters of the contractor's authorization and technician certification on manufacturers' letterhead must be provided with the bid submission. Information to be included in the

authorization or certification will be the date when the contractor and technician became authorized. Contractors who have authorizations or certifications pending or those not authorized/certified on all products shall not be considered acceptable for bidding on this project.

- Panduit
  - SpecSeal Firestop products
  - EZ Path Fire Rated Pathway
  - Belden
  - Corning
- The contractor must have installed telecommunications and data low voltage wiring projects of similar size and complexity in the last 2 years. A list of at least 4 client names, contact telephone numbers and contact persons shall be satisfactory proof for this qualification. Proposer, by virtue of this submittal, shall give LSUHSC-NO and its' agents permission to contact these clients for the purpose of determining satisfaction with the installation and service provided by the Proposer.
  - The contractor must own and must have available a properly calibrated OTDR (Optical Time Domain Reflectometer) and OLTS (Optical Loss Test Set) for testing fiber. A copy of the most recent calibration certificate shall be submitted with the bid.
  - The contractor must own and must have available a cable tester capable of testing Category 5 and Category 6 cabling.
  - The contractor must hold all legally required state licenses necessary to accomplish the work described herein. Proposer shall submit copies of licenses with the ITB submittal. Contractors who have licenses or permits pending shall not be considered acceptable for bidding on this project.
  - All required bidder/contractor licenses, certificates, and qualifications must be maintained for the duration of the contract period and any contract extensions. Additionally, the successful bidder/contractor must maintain trained personnel sufficient to meet all bid requirements at all times. Failure to maintain these standards will be grounds for default and the University may, at its option, award the remaining contract to another bidder or solicit new bids.
  - The resulting contract will be for twelve (12) months with an option to renew the contract for four additional twelve (12) month periods with agreement both from LSUHSC and the successful bidder.
  - Bidder must be able to provide the services and materials described in this bid at all the LSUHSC Hospitals, Clinics, and associated state agencies throughout Louisiana. The major sites include:
    - LSUHSC main academic campus, New Orleans
      - Includes Uptown, Downtown, and City Park Campuses.
    - LSU Interim Hospital Campus, New Orleans
    - Bogalusa Medical Center, Bogalusa
      - Includes Outpatient Campus in Bogalusa
    - Dr. Walter O. Moss Regional Medical Center, Lake Charles
    - Earl K. Long Medical Center, Baton Rouge
      - Includes LSU Surgical, Mid-City and North Baton Rouge Clinics in Baton Rouge
    - Lallie Kemp Regional Medical Center, Independence
    - Leonard J. Chabert Medical Center, Houma
    - University Medical Center, Lafayette
  - Award of the bid will be based on the following:

- Pricing provided by each bidder for materials and services based on estimated 12 month quantities. The details will be used after the contract is awarded to audit proposals generated by the contractor during the contract period.
- Compliance with all bid requirements.
- Submittal of required documentation with the bid.
- Complete responses to the bid.
- Experience performing similar services and materials for multiple organizations of similar size and complexity and using similar technology. Bidders should be prepared and may be required to host one or more site visits for representatives of LSUHSC to inspect representative bidder installations of similar size and complexity. Local sites are preferred.
- The bidder's human, financial, and technical resources.
- The submittal shall include the names, years of experience, and certifications of all technicians currently employed that will provide installation or service to LSUHSC. The list of technicians employed by the Proposer must include their office address, and telephone number.
- The University reserves the right to examine the contractor's past payroll records and any subcontractor's records to determine whether the employees being used on the contract are regularly employed. The University also reserves the right to question the use of an employee whom it feels is not certified or trained on a task that requires a training or certification.
- The University reserves the right to reject any and all bids at its discretion.
- The University reserves the right to make an all or none contract award.
- After the job has been awarded, no changes will be made to any part of the contract without written approval from the Assistant Director of Auxiliary Enterprises and the Chief Procurement Officer or his designee. Each proposed change will be submitted in writing, with a breakdown of materials and hours, and the individual cost of each.
- The contractor shall carry public liability insurance and workmen's compensation and a certificate of insurance shall be furnished at least five (5) days prior to the effective date of the contract. The limits of such insurance shall be as specified and shall be from a company licensed to do business in the State of Louisiana (Bonding, Insurance, and Liability).
- No notice of completion, delivery memo, invoice, or other document will be signed, or approvals of any type be given for any part of the job or delivery of any equipment or materials, except by the Assistant Director of Auxiliary Enterprises or his designee.
- All work will be done during normal working hours unless prior written approval is granted by the Assistant Director of Auxiliary Enterprises. All work must be completed with minimal disruption to normal business operations.
- When a discrepancy or ambiguity arises between the written specifications and the drawings, the document which is more stringent, or which benefits LSUHSC more as determined by the Assistant Director of Auxiliary Enterprises shall govern.

## **BASE BID**

- 1) Bidders should address all topics listed in the bid in a concise, comprehensive, and orderly manner. Bidders should respond to topics in the bid in the same order as they are listed.
- 2) Bidder must complete, sign, and return with the bid the "INVITATION TO BID" sheet at the beginning of this bid.

- 3) If any bidder locates any errors in the bid or questions any portion of the bid, they should notify purchasing manager Lori Long at (504)568-4715 as soon as possible. Bidders should have a complete understanding of the bid before submitting their bid for consideration. Notification of errors or misprints will not negatively affect the award of the bid.
- 4) Bid must be in the purchasing department's offices before the closing date and time listed on the "INVITATION TO BID" sheet at the beginning of this document.
- 5) Bidder must attach all required supporting documentation to the bid; references, pricing, certifications, licenses, insurance certificates, etc.
- 6) The contract will begin on the contract date and end twelve (12) months later.
- 7) The contract may be extended for up to four additional twelve (12) month periods, at the same price, terms and conditions, if agreeable with the successful vendor and LSUHSC. Total length of contract not to exceed sixty (60) months. Renewal is optional for both parties.
- 8) This bid is for the exclusive use of LSUHSC Auxiliary Enterprises for support of the LSUHSC Campuses.
- 9) Bidder must have staff certified in the use of the following materials to provide the required services as outlined in this bid:
  - Panduit
  - SpecSeal Firestop Products
  - EZ Path Fire Rated Pathway
  - Corning
  - Belden
- 10) Quantities listed on Schedules A and B are estimates and not guaranteed.
- 11) Vendor must maintain a thirty day return policy on products and materials in resalable condition.
- 12) Unless specified otherwise, work will commence at a job site within five (5) business days of receipt of purchase order by vendor. Network Wiring may agree to a later start date on a case by case basis. Should the winning vendor be consistently unable to deliver goods within this time requirement, the contract may be terminated and awarded to the next lowest bidder.
- 13) The contractor agrees that, at all times, the employees of the contractor furnishing or performing services under the contract shall do so in a professional manner.
- 14) Information and data furnished by the vendor must be accurate and complete.
- 15) Contractor's employees and sub-contractors provided to Auxiliary Enterprises under this agreement may be subject to criminal background checks.

- 16) No profanity or loud boisterous conversations will be tolerated in or around the property. No music of any type will be tolerated in or around the property.
- 17) Contractor shall not put waste in vacant or storage areas. All waste is to be removed daily from the building and deposited in a location designated by the Institution or hauled off site. Selected provider is responsible for maintaining cleanliness of work areas.
- 18) Smoking is only allowed in designated areas.
- 19) Contractor's representatives are to confine themselves to their respective work areas. Workers found roaming or loitering in non-work areas will be banned from the property.
- 20) The Institution will not supply parking areas. Selected provider shall arrange for parking as required with outside agents.
- 21) All workers will wear LSUHSC-NO identification tags at all times. The names and titles of all workers that will be on the Institution's premises and their supervisor's name shall be submitted prior to the commencement of work.
- 22) The bidder must provide two contacts, an account or sales representative and an alternate, to handle all Network Wiring inquiries. The bidder must provide one contact (service representative) to handle all general Network Wiring service inquiries. All should respond to inquiries within four (4) hours of request.
  - a) These representatives will be empowered to respond or seek answers to questions regarding issues with product, service, or account information. The contractor representative will do the necessary research in a timely manner and return that information to AE Network Wiring.
  - b) When the bid is awarded and jobs are issued, the contractor must furnish a field contact for each project to answer questions concerning jobs in progress. This individual must be able to respond to an email or phone call within two hours.
  - c) The Account Manager must work with and through AE Network Wiring and may only work directly with users through arrangements and joint efforts arranged by AE Network Wiring. Should individual users or support personnel within LSUHSC contact the contractor directly concerning the purchase of services or products covered by this contract, the contractor should obtain their name and phone number and direct those individuals to the AE Network Wiring Coordinator.
  - d) These representatives will be knowledgeable of the contract and the relationship between the contractor and AE Network Wiring.
- 23) Bidders are specifically encouraged NOT to include their own language or terms and conditions as doing so will likely invalidate their bid. This should not be read as to discourage response where vendors are to make additional offers of services or products beyond the requirements of this bid. The Contractor shall perform all services as an independent contractor and shall discharge all its liabilities as such. Any actions or representations, whether oral or written by the contractor with respect to third parties, shall not be binding on LSUHSC.

- 24) The Contractor shall not in any way or form publicize or advertise that the contractor is providing services to LSUHSC without the express written approval of the Director of Auxiliary Enterprises, obtained in advance, for each item.
- 25) In order to qualify for consideration, bidders shall list not less than four (4) references where the bidder has performed the same or similar services with comparable volumes at institutions comparable in size and business environments within the last two (2) years. Included with all the above references should be the name of the institution/entity, address, years of service, contact person, and phone number.
- 26) Brochures, catalogs, or any other materials referenced by the bidder to support a response should be appended to the bid.
- 27) Any additional equipment, services, or resources that the bidder is willing to provide at no additional charge should be listed. If the additional equipment or services are conditional, the bidder should indicate the condition(s). When the bid is awarded, the contractor will be expected to provide the additional equipment/services unless AE retracts the requirement.
- 28) Bids must be complete for consideration.

#### TERMINATION OF CONTRACT

LSUHSC AE may terminate the contract(s) with 30 days written notice, without any penalty, at any time for one or more of the following reasons:

- a. **Uncontrollable circumstances:** If reasons beyond the control of LSUHSC (e.g. fire, natural disaster, loss of revenue – see 2.b. below), cause business operation in any or all of the facilities of LSUHSC to become interrupted or discontinued, then AE shall have the right to scale-back, terminate, or suspend the contract immediately by certified written notice.
- b. **Lack of funding**
- c. **Performance:** The contract(s) can be cancelled if the winning vendor fails to meet any requirements of the contract specifications. It is the responsibility of the vendor to be sure all vendor personnel associated with the contract are knowledgeable of the contract requirements. Should the vendor fail to deliver the equipment and services as specified, the vendor will be provided a thirty (30) day written notice of cancellation or at the discretion of AE, the contractor may be given an opportunity to resolve the problem(s) to prevent termination.
- d. **Exclusivity and Pricing:** LSUHSC Auxiliary Enterprises expects to obtain cost savings through volume buying. The contract awarded as a result of this bid will be for the exclusive use of LSUHSC Auxiliary Enterprises and pricing offered in these contracts will not be extended to other entities within the LSU Health Sciences Center. If during the course of this contract, the winning vendor does offer the same or lower pricing to other LSUHSC entities, it must adjust its pricing to Auxiliary Enterprises to be lower than the pricing being offered to the other entity.

In the event either party breaches any terms or conditions of the contract agreement, the aggrieved party shall give the other party written notification within ten (10) calendar days of the alleged breach. The aggrieved party shall set forth the alleged breach and demand compliance with the contract. If within ten (10) days of notification of the alleged breach the offending party has not contested, ceased, or arrangements have not been made to correct the alleged breach, then the aggrieved party may terminate the contract without any prejudice to any right or

remedy the aggrieved party may have by giving ten (10) calendar days written notification of termination to the offending party. Repeated notification of similar breaches may result in termination. Correction of any breaches should be a permanent resolution. Any contract cancellation for cause shall be served by registered or certified mail.

## **TERMINATION FOR CONVENIENCE**

LSU Health Sciences Center may terminate the Contract at any time by giving thirty (30) days written notice to the Contractor. The Contractor shall be entitled to payment for deliverables in progress, to the extent work has been performed satisfactorily.

## **SUPPLIES AND MATERIALS**

- A) A list of materials and supplies is attached (Schedule B). Bidders must furnish a price for each item in the units of measure shown. If there are volume discounts, those should be provided with this list.
- B) Freight must be included in the price for each item.
- C) Contractor must provide full documentation of Warranty/Return policies for all products when delivered.
- D) Where brand and model or item number is provided, the product bid must be that brand and model or item number. If a model or item number is no longer manufactured and unavailable, the bidder can indicate the model or item number has been discontinued and bid an equal or better item specifying the make/brand, model and the manufacturer's item number.
- E) All products must be fully warranted by the manufacturer. It will be the bidders' responsibility to determine that the manufacturer as specified in the bid supports the equipment bid.
- F) All products must be new, packed in their original carton and sealed by the manufacturer.
- G) All manufacturers supplied documentation must be delivered with each unit.
- H) For efficient support, uniformity during the contract period is essential. If an item or component that is listed in this bid is discontinued by the manufacturer, the contractor must furnish an acceptable equal or better substitution that meets all the original specifications at the contract price.
- I) AE Network Wiring may provide materials for a contracted project or they may elect to have the contractor provide the materials.

## **SERVICES**

- A) Technicians and other installation crewmembers must be dressed appropriately. No short pants are allowed and shirts must be tucked into pants. There will be no logos or wording other than the contractor's logos or vendor related verbiage on clothing. Caps will be plain or contain the contractor's logo.
- B) Contractor employees will stay busy at all times when on campus.
- C) Contractor employees will interact with LSUHSC staff, faculty, students, or visitors only in an official and professional manner when on campus.
- D) The designated contact person for crews on site will closely supervise their crew, knowing where they are at all times and ensuring that they are productive when on site.
- E) Due to the nature of healthcare and associated educational operations, it will sometimes be necessary to request that projects be completed on the weekend and/or after normal working hours. Bidder must be able to provide this service as they would during normal working hours at special rates that will be determined in the pricing portion of this bid.

- F) As projects increase in frequency and one contractor team cannot meet the time constraints, the contractor must be able to mobilize an additional team to stay current on projects.
- G) In the case of an emergency project, the contractor must provide a team next day to start the work or move a team from another non-emergency project to the emergency project next day. The contractor will be able to add additional costs to either project in these situations based on the prices provided under Schedule A.
- H) Phone calls of all types should be returned promptly. The standard expected is no later than the next business day.
- I) Technical inquiries either written or verbal must receive a firm commitment for response. Same day response is preferred but it is recognized that some answers require research. The standard expected is a three (3) day commitment.
- J) Once a project is approved, the successful vendor must be able to begin work on the project within 5 business days and devote as many resources as necessary to complete the work in a timely manner.
- K) Vendor must have the resources to work on multiple projects simultaneously when necessary.
- L) The Assistant Director of Auxiliary Enterprises and University Police shall be notified before any work is done which will create noise, smoke and/or dust, or involve soldering, welding, or other heat or flame-producing process.
- M) All tasks are to be performed in a workmanlike manner, according to standard and acceptable trade practice for the trades involved. All work must be performed in accordance with all applicable city, state, and federal codes, laws, regulations and ordinances. Knowledge of existing codes, laws, regulations and ordinances pertaining to the above work is the responsibility of the successful bidder.

## **BIDDING SERVICES**

Bidders will be required to bid materials and services on Schedules A and B.

- 1) Each bidder must provide a complete price for materials that includes material cost, shipping, and handling. Charges for expedited shipments will be negotiated on a case by case basis.
- 2) Each bidder must provide the complete cost for labor for each line item on Schedule A, reflecting the appropriate units. Labor rates will reflect costs for project management and design.
- 3) If there are volume discounts, those should be listed.
- 4) Vendors should attach a list of other network infrastructure services they provide that includes the service, unit of measure, and price per unit. Also, any volume discounts for these services.

## **STANDARDS**

Unless approved otherwise by LSUHSC Enterprise Networking, the standards outlined in this bid and in the attached standards documentation must be followed. Exhibit B provides examples of an acceptable level of workmanship for network installations. LSUHSC Enterprise Networking may approve variations to these standards for existing installations or in extraordinary circumstances. Approval for these exceptions must be documented in plans, emails or other documents.

### **A) Materials**

- 1) Where brand name materials have been established as listed in this bid or attached standards, the contractor must use the specified brands, models, and item number materials only.



- 2) When submitting materials prices where name brands are specified, the bidder must bid those same name brand materials. See attached materials pricing lists (Schedule B).
  - 3) Generic materials
    - a) The vendor must bid and furnish products of equal quality where "brand name or equal" is referenced.
    - b) If there is no name brand or equal requirement, the vendor can provide a price for any make product that serves the same function.
- B) Installation
- 1) Contractor must obtain their own copies of and comply with the following:
    - a) State of Louisiana, Division of Administration: Facility, Planning, & Control Guideline Requirements, Specifications, and Wiring Diagrams.
    - b) Latest updates of TIA/EIA Building Telecommunications Wiring Standards including 526-7, 526-14, 568-B.1, 568-B.2, 568-B.3, 569, 598, 606, 607, and 758.
    - c) ISO Category 6
    - d) Anixter Levels Channels Program, Levels 5, 6 & 7.
    - e) State and local codes governing.
    - f) SpecSeal Product and Application guide, specifically through-penetration firestop systems (XHEZ).
    - g) FCC Rules, National Fire Protection Association Standards and Codes, as well as Louisiana and local fire and building codes.
  - 2) Belden Media Twist Level 7 (Cat 6) cable must be used for all new installations (Part# 1872A for non-plenum and 1874A for plenum), blue for data, red for voice, and electric ivory for spare/other.
  - 3) All UTP cables must be tested to 250 MHz on each cable pair and be capable of Gigabit Ethernet. Test results must be saved and submitted electronically to LSUHSC Auxiliary Enterprises at completion of each project.
  - 4) Connectorization using Panduit components rated for Cat 6.
  - 5) All cable runs should be terminated and labeled at both ends. At the horizontal cross connects (HC), all terminations must be on patch panels and terminations in the work area must be secured in a junction box.
  - 6) All horizontal cable runs should be terminated on the same floor.
  - 7) A "drop" is considered a single faceplate with one or more cables using a common path and originating from the same location. A standard drop consists of three cables (1 data, 1 voice, and 1 spare each terminating on a separate patch panel).
  - 8) Eight position jack pin/pair assignments will comply with T568B designation.
  - 9) Patch cables should be supplied (blue for data and red for voice). Connectors should always match cables in color. Patch cables should be only as long as needed to travel through the cable management without any extra or excess. All should be neatly bundled and labeled per standards.
  - 10) Workstation cables (PC, printer, etc. to wall plate) can be supplied by the PC or IT Support staff or the contractor, on a project-by-project basis.
  - 11) Refer to the attached standards for details on telephony cross-connects (Exhibit C).
  - 12) Port mapping documentation must be provided in electronic format to LSUHSC Office of Enterprise Networking after each project.
  - 13) Interbuilding backbone cabling will consist of at least 12 strands of single-mode (8.3 microns) fiber-optic cable. LSUHSC Enterprise Networking will specify in each case.
  - 14) Intrabuilding fiber optic riser systems within buildings will be a minimum of 12 strands of multimode (62.5/125 micron) fiber to each intermediate distribution closet located on each floor.

- 15) Fiber optic cabling shall be completely encapsulated for the entire length based on LSUHSC Enterprise Networking requirements (metallic tubing, conduit or armored cable may be specified).
- 16) Facilities Management must approve all penetrations.
- 17) All rack assemblies must be securely attached to the floor and walls. Cable ladders must be used to manage cables in all telecommunications closets. Appropriate vertical and horizontal cable management accessories must be used to manage all cables on racks.
- 18) All cables must be bundled using materials that will not damage cables and can be easily removed and replaced to accommodate additional cables (example: Velcro cable ties). The same should firmly attach cable bundles to the cable ladders.
- 19) In new installations, bundles of cables leaving a telecommunications closet must be supported by cable trays (as specified in the materials portion of the bid) if the number of cables exceeds the vendor specified capacity of a single J-hook. Fewer than the maximum number of cables the vendor specifies as the capacity of a single J-hook must be supported by J-hooks at a maximum distance of eight feet. Cables should never lie on ceiling or be supported by other structures in a ceiling. Enterprise Networking will determine the method of supporting additional cables in existing installations.
- 20) Cables must be routed through ceilings and walls where physically possible. The AE Network Cabling Coordinator must approve alternate routes. When it is impossible to route cables in a wall, the cables must be enclosed in Panduit raceway (see materials listing attached to the bid) and the number of cables cannot exceed the manufacturers maximum capacity.
- 21) Faceplate and junction box installation must comply with the standards as outlined in the attachments.
- 22) Each cable must be tested and reach acceptable performance levels from jack to port per attached standards.

## **Hospital Requirements**

### **Penetrations through floors, fire and smoke walls:**

Prior to making any penetrations in fire or smoke barriers the contractor shall obtain a penetration permit. The permit application will indicate the penetration location, what is being put through the penetration, and the UL assembly that is being used to seal the penetration.

### **Interim Life Safety Measures (ILSM).**

ILSM are 11 administrative steps required to be followed during any construction activity to maintain the fire safety features of the facility. The contractor shall follow all ILSM requirements.

### **Infection Control Risk Assessment (ICRA)**

Prior to any work being done in any nursing area or patient treatment area an infection control risk analysis needs to be completed.

## **ESTIMATES**

- A) PC Support, IT Support, and Enterprise Networking often require an estimate for a project prior to submitting requests for funds to help departments budget existing funds.

- B) An initial vendor site survey and estimate may be required for any project. Initial site surveys/estimates should be at no cost and must be provided by a RCDD Certified Engineer.
- C) Site surveys should be scheduled and conducted within 5 business days of the initial request unless a later date is agreed to by LSUHSC Enterprise Networking.
- D) Estimates are to be submitted no later than 4 business days after the site survey has been conducted unless an extension is granted by LSUHSC.

## **INVENTORY**

The contractor must maintain a sufficient inventory of the following materials (per material specifications in this bid or attachments to this bid) to start a project next day:

- Data cable, blue, red and white, non-plenum and plenum
- Data jacks
- Faceplates and junction boxes
- Patch cords
- Patch panels
- J-hooks
- Velcro ties
- Labels

## **BILLING**

The contractor cannot invoice a job or project until the job has been declared finished to the Assistant Manager assigned to AE Network Wiring and the job has been reviewed and accepted by the appropriate PC or IT Support person and AE Network Wiring. Once accepted, the vendor must deliver an invoice for a job within ten (10) working days of acceptance. The contractor will send a separate invoice for each project with detail pricing based on the detailed services and materials attached to this bid. Each invoice must have a PO Number, an AE Work Order Number, the name of the AE Network Wiring representative that requested the job, and a unique job name, which will be supplied by AE Network Wiring. In addition, the invoice must contain a unique vendor invoice number, request date, and an invoice date. Invoices should be sent to:

Auxiliary Enterprises Administration  
Accounts Payables - Wiring  
1900 Perdido Street, P3-1  
New Orleans, LA 70112

The contractor should send a statement of unpaid invoices at the end of each month to the same address above.

## **BONDING, INSURANCE AND LIABILITY**

The contractor will be required to execute and deliver to the LSU Health Sciences Center within five (5) days after receipt of formal notification of awarding of the contract, a performance bond in an amount equal to the contract sum. The successful vendor agrees that a surety or insurance company currently in the United States Department of the Treasury Financial Management Service List of approved binding companies and in accordance with restrictions set by them will secure this bond. Power of attorney must be attached to the bond

submitted. In addition, a surety or insurance company that is currently licensed to do business in the State of Louisiana shall write any surety bond written for this service.

The contractor shall carry public liability insurance and workmen's compensation and a certificate of insurance shall be furnished at least five (5) days prior to the effective date of the contract. The limits of such insurance shall be as specified and shall be from a company licensed to do business in the State of Louisiana.

Contractor shall not be liable for loss or damage resulting from strikes, lockouts, fires, explosion, theft, floods, riots, war, malicious mischief, storms, acts of God or other similar or dissimilar cases beyond its control. Contractor assumes no liability for accidents to persons or property except those directly due to the negligent acts or omissions of contractor or his employees. Throughout the term of this contract, contractor shall, at its cost, maintain insurance and provide the owner with current certificates of insurance for limits of liability as follows:

- Workman's compensation and employer's liability equal to or in excess of limits of workman's compensation laws in the State of Louisiana.
- Comprehensive liability for not less than \$1 million per occurrence, including bodily injury, liability, property damage liability, with the same coverage for automobile liability.

#### **DEFAULT:**

Should LSUHSC seek remedy for non-performance or non-compliance through liquidated damages as opposed to contract cancellation, the following monetary penalties shall apply:

1 <sup>st</sup> Offense	\$ 500 plus withholding any outstanding payments due
2 <sup>nd</sup> Offense	\$1000 plus withholding any outstanding payments due
3 <sup>rd</sup> Offense	\$1500 plus withholding any outstanding payments due

Contractor will receive written notification of all non performance and/or non compliance issues within seventy-two (72) hours of the occurrence. Non performance and/or non compliance issues will be evaluated on a case by case basis in those instances where the breach is beyond the contractor's control.

#### **SCHEDULE**

**05/14/2010 @ 2:00 P.M. – Bids and all supporting information is due. No bids will be accepted after this time.**

**05/14/2010 @ 2:00 P.M. – Bids will be opened.**

**Site visits may be scheduled and co-ordinated with Petros Christakis @ 568-4919 or email pchri1@lsuhsc.edu. No questions will be answered at the site visit but must be submitted in writing and addressed to Lori Long @ lcueva@lsuhsc.edu.**

Successful vendor must be prepared to begin providing services and materials within 30 calendar days of notification to the vendor of the award of the bid and issuance of the LSUHSC Purchase Order that covers the agreement. If the successful vendor agrees, this support can begin anytime after issuance of the LSUHSC Purchase Order, prior to the 30-day deadline.

## **ATTACHMENTS**

- **Schedule A, Services Pricing Bid List**
- **Schedule B, Materials Pricing Bid List**
- **Exhibit A, Sample Jobs for Reference**
- **Exhibit B, Photos of Wiring Installations**
- **Exhibit C, LSUHSC Network Infrastructure Standards**
- **Exhibit A & D, Insurance and Indemnification**
- **Checklist of Documentation required for Bid Submittal**

## **Exhibit A**

### **2010 Network Wiring Support Bid** **Job Samples**

#### **Sample 1: Job 8009, Clinical Education Building 5-8, Add/Relocate** **Standard Drops**

The following work will be performed at 1542 Tulane Avenue:

A. Place, terminate, jack, and test (2) Cat6 cables for data and (1) Cat6 cable for voice at each of (10) locations on the 5th floor, (26) locations on the 6th floor, (14) locations on the 7th floor, and (2) locations on the 8th floor.

B. Relocate existing station cables at (3) locations on the 6th floor, and (1) location on the 8th floor.

C. Place the Cat6 patch cords at user locations in cubicles as follows:

- \* Room 754A - (3) data on left wall near entrance door.
- \* Room 754A - (2) data on left wall near rear corner.
- \* Room 754A - (3) data on wall around right corner.
- \* Room 613 - (3) data on left wall.
- \* Room 613 - (1) data to existing drop on right wall.
- \* Room 645 - (3) data on left wall.
- \* Room 645 - (2) data & (1) voice on right wall to left of interior door.
- \* Room 645 - (1) data in each of (2) cubicles on right wall.
- \* Room 658 - (2) data on right wall near windows.
- \* Room 658 - (2) data on right wall near entrance.
- \* Room 658 - (4) data from existing drops on left wall.
- \* Room 517 - (8) data & (2) voice from existing drops in (4) cubicles on far left and (4) cubicles on far right.
- \* Room 551 - (3) data on right wall.
- \* Room 551 - (3) data from existing drop.

The work includes the following:

1. Place station cables in lift out ceiling areas and hard ceiling areas. Support the cables with J-hooks where possible. Place sleeves through fire rated walls to facilitate cable placement. Fire stop sleeves after cable placements. Some access hatches exist for entry into hard ceiling areas.

2. Place Panduit raceway and outlet boxes as required in the hard ceiling areas and wall locations that cannot be fished.

3. Place (1) blue and (1) red Cat6 patch cable in horizontal closets for each (3) wire standard drop.

4. Patch cables into patch panels and into the next available ports in the switch. Provide horizontal closet location, IP address, blade, port, and jack ID in completion email for each cable installed.

5. Obtain sign off and forward test results to Auxiliary Enterprises.

**Sample 2: Job 8006, Replace Existing Fiber Cable from Medical Education Building to Residence Hall**

The following work will be performed at 1900 and 1901 Perdido St:

A. Install new replacement 12MM/12SM fiber cable from the 4th floor closet in the Medical Education Building to the second floor closet in Residence Hall along new route. Once completed and cut over, remove existing fiber.

B. Place, terminate, jack and test (2) Cat6 cables for data and (1) Cat6 cable for voice at (1) location on the second floor of Residence Hall in the Security Desk area.

C. Place, terminate, jack and test (4) Cat6 cables for data at (1) location on the second floor of Residence Hall in the Security Desk area.

The work includes the following:

1. Follow the existing fiber cable path from MEB4 to the 2nd floor elevator lobby. Proceed through the elevator lobby and engineering offices in new plenum innerduct and depart the building above the 2nd floor bridge connecting the two buildings.
2. Pull out abandoned/dead station cables from one of (2) existing 2" conduits atop the bridge and use this path to route the new fiber across the street.
3. Modify existing conduit path at Residence Hall to route from top of bridge down to ground level and come up into the second floor wiring closet. Xray scan and core drill Residence Hall 2nd floor where necessary to provide conduit path.
4. Coordinate with IT to cutover Residence Hall connectivity to new fiber.
5. Remove entire length of original fiber cable and modify the abandoned 2" conduit in the same manner as "3" above. This will provide a spare path for future use.
6. Obtain sign off from IT and forward test results to Auxiliary Enterprises.

**Sample 3: Job 8020, Dental School 8th Floor Lab Renovation**

The following work will be performed at 1100 Florida Ave:

A. Place, terminate, jack and test (2) Cat6 cables for data and (1) Cat6 cable for voice at each of (4) locations in DSB Suite 8405.

B. Place, terminate, jack and test (1) Cat6 cable for data at each of (32) tables in Suite 8405.

C. Place, terminate, jack and test (2) Cat6 cables for data at each of (20) locations in Suite 8405.

D. Place approximately 80' of 12" cable tray between DSB Suite 8405 and the eighth floor horizontal wiring closet.

The work includes the following:

1. Place station cables in the lift out ceiling areas within Suite 8405. Support cables every 4' to 5' on J-hooks.
2. Place blue and ivory cables for data and red cable for voice.
3. Provide and place (1) blue Cat6 patch cable for data and (1) red Cat6 patch cable for voice in the HC.
4. Forward Cat6 test with documentation to Auxiliary Enterprises.

**Sample 4: Job 8537, EKL Warehouse and Temporary Offices**

The following work will be performed at 5445 Airline Drive, B.R.LA:

A. Place, terminate, jack and test (2) Cat6 cables for data and (1) Cat6 cable for voice at each of (16) locations.

B. Place, terminate, jack and test (2) Cat6 cables for data and (2) Cat6 cables for voice at each of (2) locations.

C. Place, terminate, jack and test (4) Cat6 cables for data and (4) Cat6 cables for voice at each of (2) locations.

D. Place, terminate and test (1) 50 pair copper cable from the D-mark to the horizontal closet.

E. Construct a new (3) rack system with 12" & 18" ladder runway in a new horizontal closet. Install fire rated plywood on walls to support ladders and punch down blocks.

The work includes the following:

1. Place station cables (Item A) in the area above the hard ceiling. Extend cables down existing 3/4" conduit to station locations.
2. Place station cables (Item B&C) in the area above the hard ceiling. Extend cables down existing 3/4" and surface runway to the station locations.



3. Place blue and ivory cables for data and red cable for voice. Place (4) blue Cat6 cables for data at each of the (2) locations in item C.

4. Provide and place (28) blue Cat6 patch cables for data and (28) red Cat6 patch cables for voice in the HC. Patch cables into the patch panels and into the next available ports in the switch. Provide IP address, blade, port, and jack ID in completion email for each cable installed.

5. Provide and place 4" conduit from D-mark to lift out ceiling area to facilitate 50 pair cable routing. Provide and place 4" sleeve through HC wall to facilitate station cable placement.

6. Provide and forward Cat6 test with documentation to LSUHSC Auxiliary Enterprises.

7. Terminate 50 pair cable on 66 blocks in the D-mark room and on an Ortronic patch panel in the HC.

8. Place the 50 pair cable in the ceiling area between the D-mark room and the HC.

9. Provide and forward copper continuity test results to Auxiliary Enterprises.

#### OPTION 1

Add (1) Cat6 cable for voice to each of (16) station locations in Item A above.

#### OPTION 2

Place, terminate, jack and test (2) Cat6 cables for data and (1) Cat6 cable for voice at each of (3) locations near the loading dock.

#### **Sample 5: Job 8071, Medical Education Building Elevator Penthouses**

The following work will be performed at 1901 Perdido St:

A. Place, terminate, jack and test (2) Cat6 cables for data at (1) location and (1) Cat6 for data at another location in the penthouse for elevator's 6 & 7. (Freight)

B. Place, terminate, jack and test (2) Cat6 cables for data at (1) location in the penthouse for elevator #8. (Animal Care)

The work includes the following:

1. Terminate cables on a new 24 port patch panel with horizontal wire management in the 7th floor HC.

2. Place cables in 7th floor lift out ceiling areas. Support cables with J-hooks at 4' to 5' intervals. Place cables in existing conduit from the 7th floor to each elevator penthouse. Extend conduits from entrance wall up and over to the access control panel locations within the penthouses.

3. Place plywood for control panels at (3) locations.

#### OPTION 1

Same as above but place new conduit from the 7th floor to each elevator penthouse. This work includes scanning and core drilling (3) new vertical penetrations between floors.

#### OPTION 2

A. Same as above but place new 2" conduit from existing 18"\*24"\*6" box in elevator room down to 7th floor.

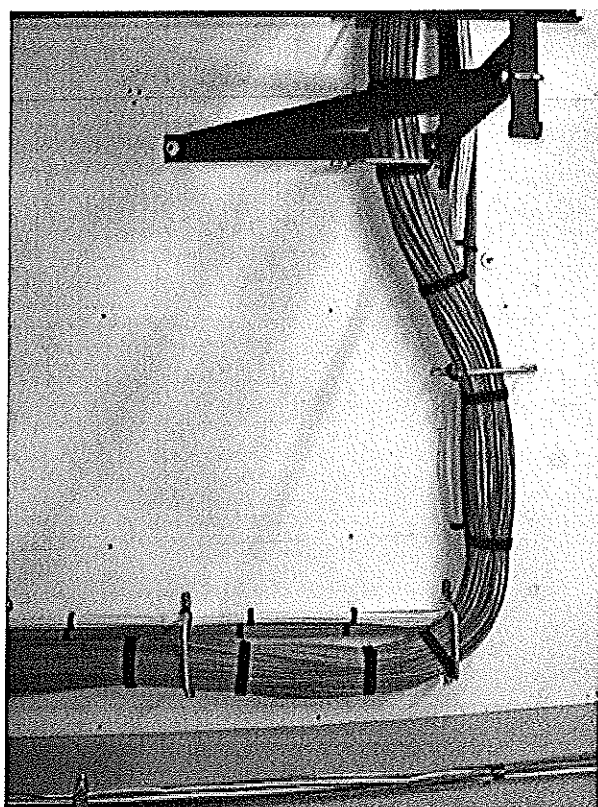
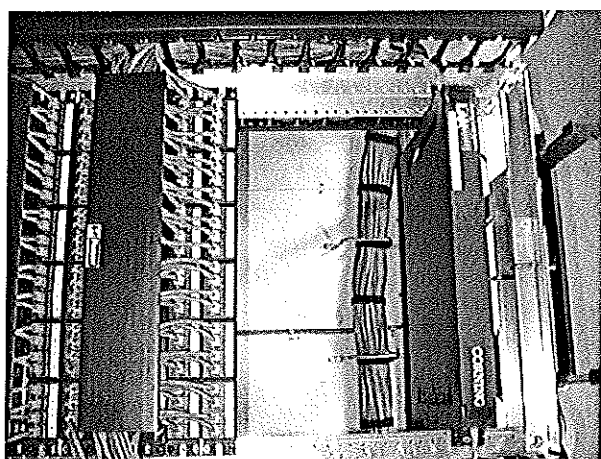
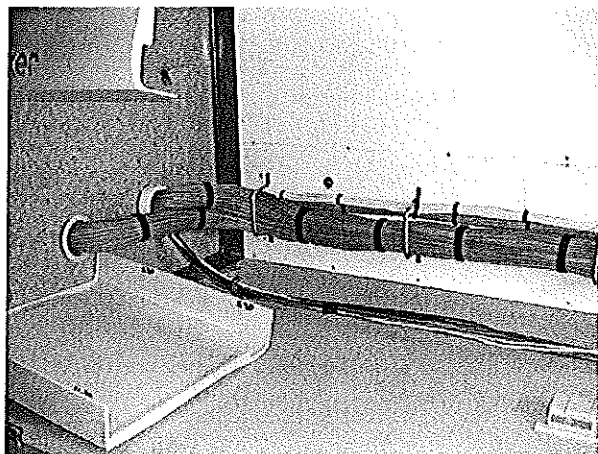
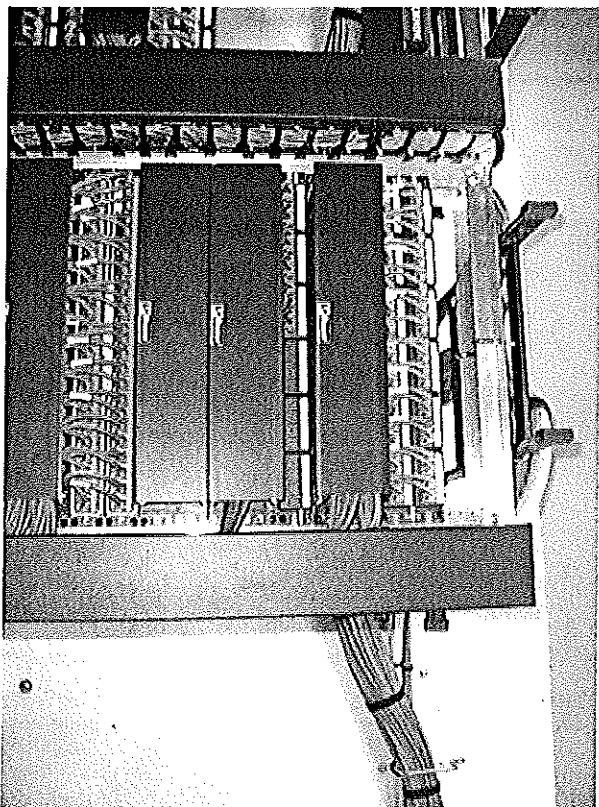
B. Scan floor and core new 2&1/2" hole down to the 7th floor.

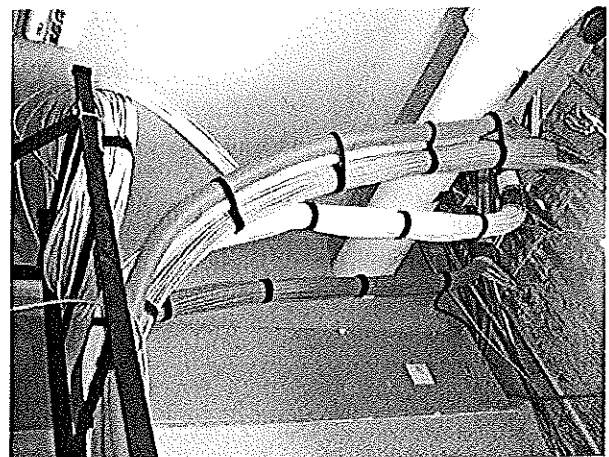
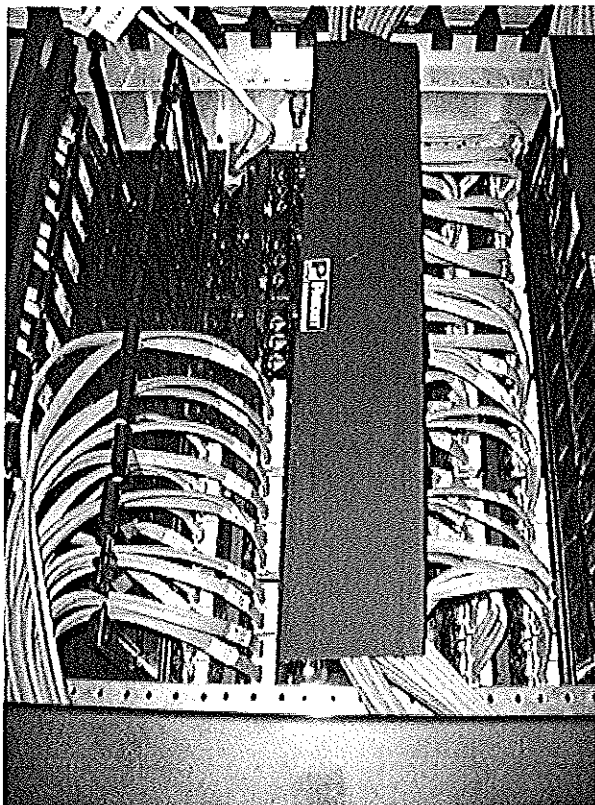
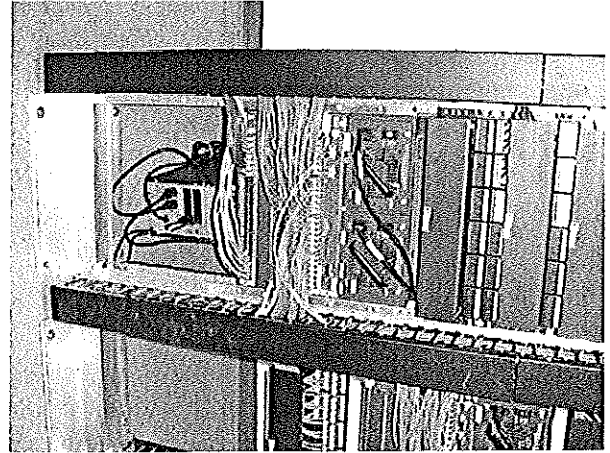
C. Place new 1" conduit from 18"\*24"\*6" box to existing outlet boxes in each penthouse.

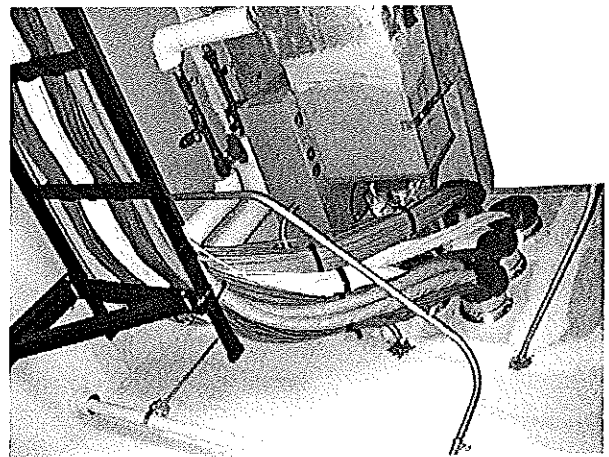
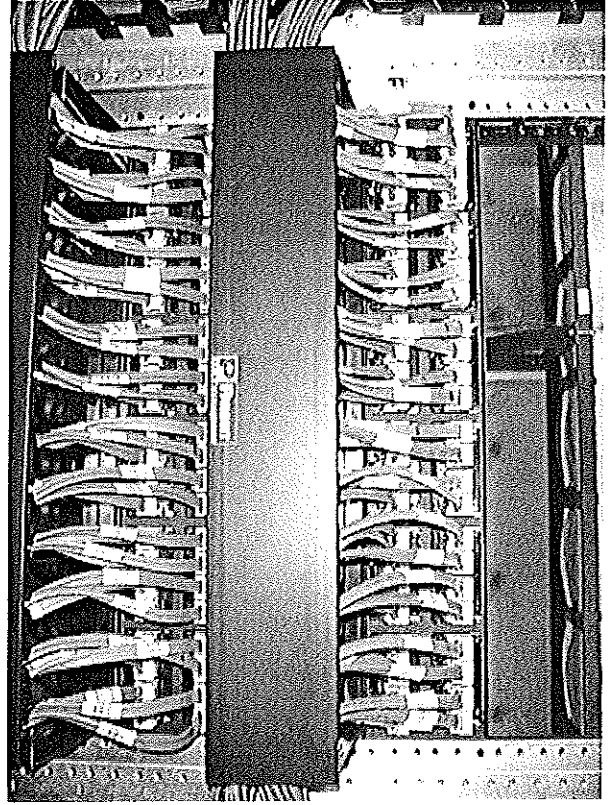
D. Place new 1" conduit from existing boxes in each penthouse to access control panel locations.

## **Exhibit B**

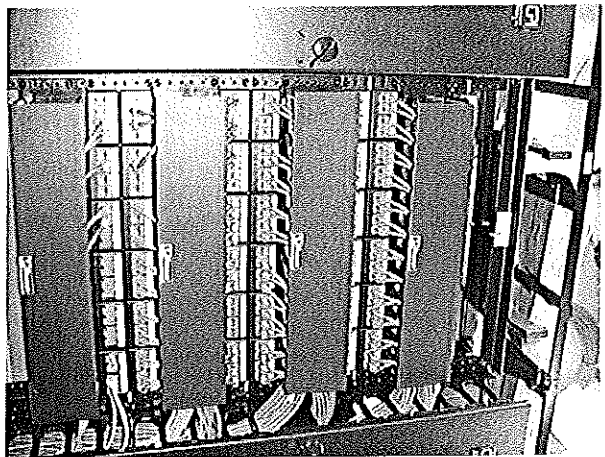
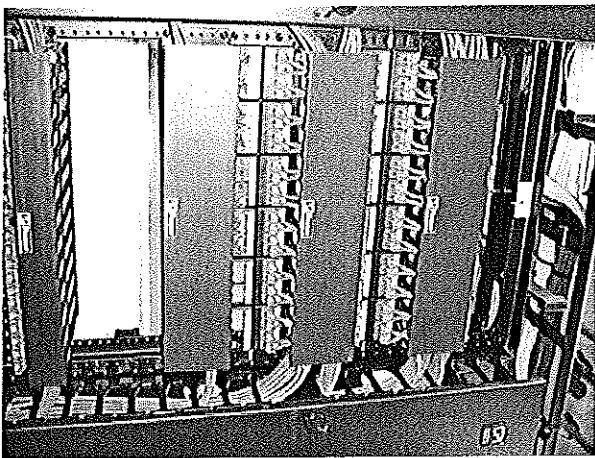
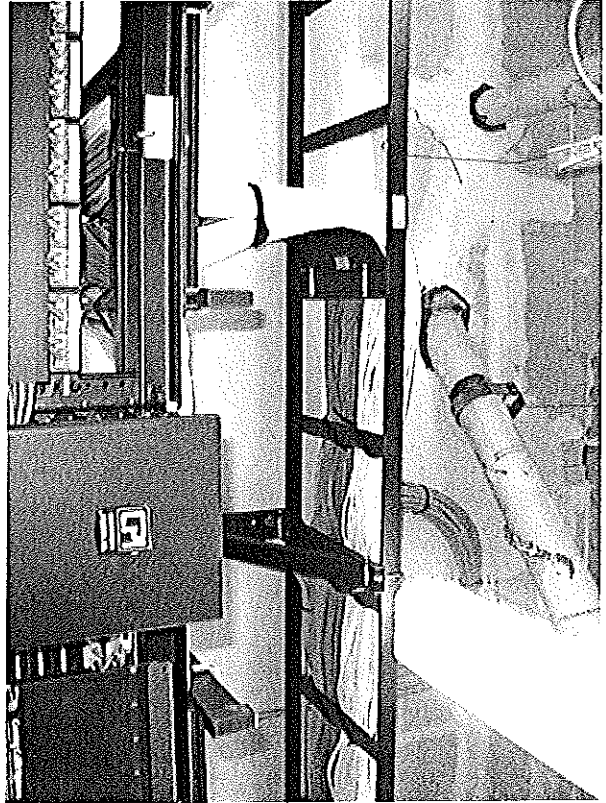
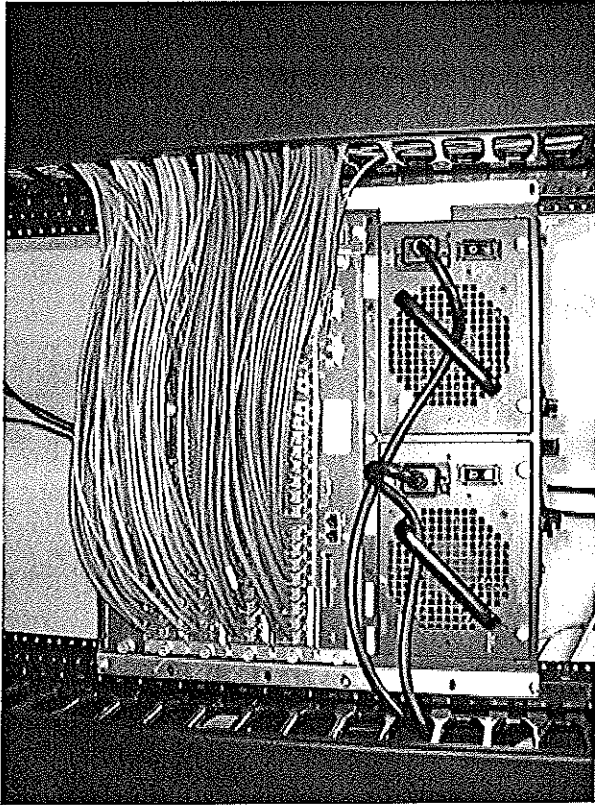
**These photographs of existing LSUHSC network installations illustrate a minimally acceptable level of workmanship which will be required of the successful bidder.**

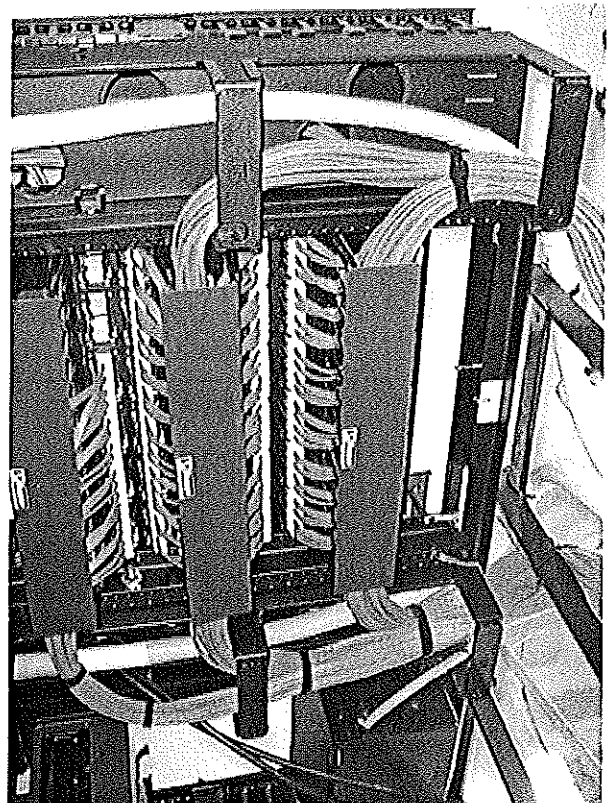
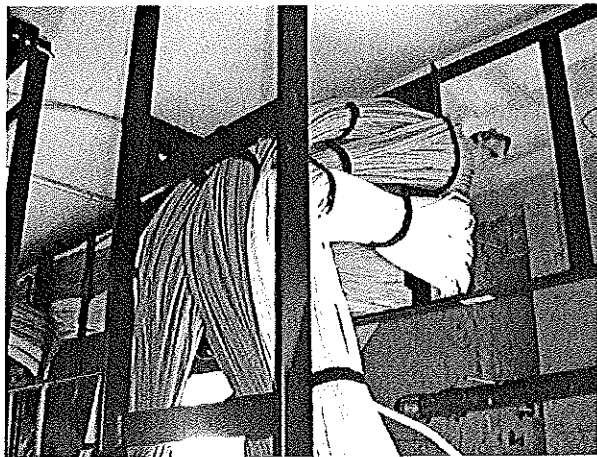
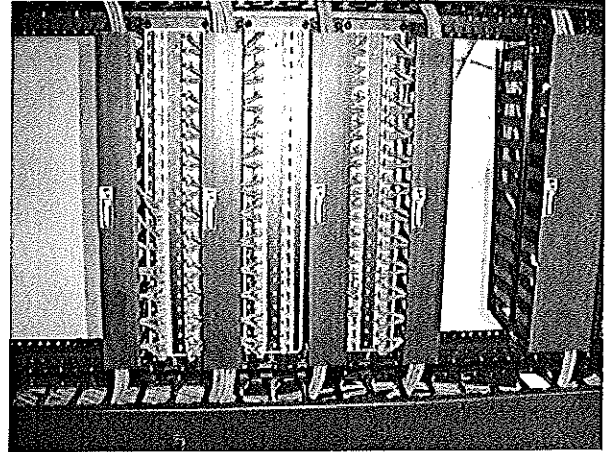
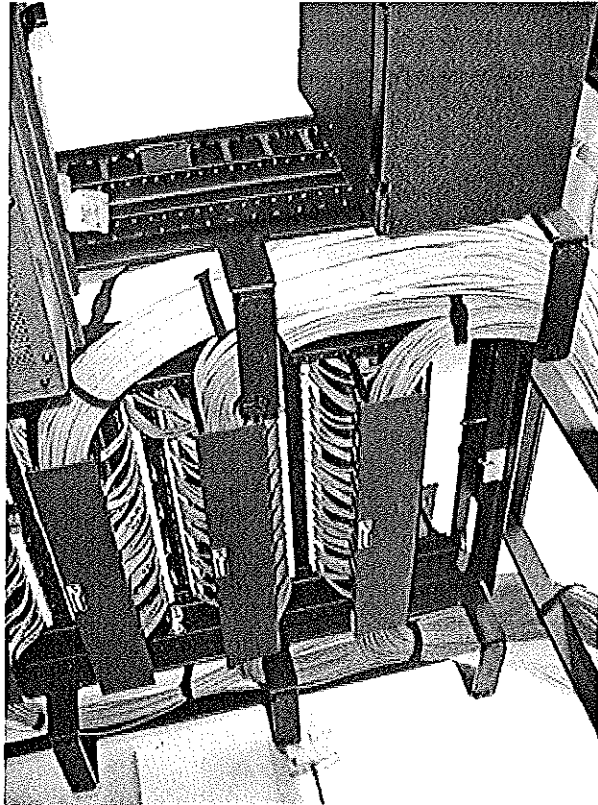














# Exhibit C



Health Sciences Center.

LSUHSC Computer Services  
433 Bolivar Street  
New Orleans, LA 70112  
Phone 504-568-6130

Enterprise Computer Services, Support Services

---

## **Network Cabling Infrastructure**

---

Design and Installation Standards

Last Revision 11/05/2007

Network Cabling Infrastructure: Design and Installation Standards .....	3
General .....	3
Scope .....	3
Drop Definition .....	3
Brand Specific Statement .....	3
Industry Standards .....	4
Unshielded Twisted Pair Cable .....	5
Cable and connectivity .....	5
Fiber Optic Cabling .....	8
Topology .....	8
Interbuilding Cabling .....	8
Intrabuilding Cabling .....	8
Installation Techniques .....	8
Cable Pathways .....	9
Testing and Certification .....	10
Conduit .....	11
Telecommunications Rooms .....	12
Relay Rack and Vertical Cable Management .....	12
Patch Panel and Horizontal Cable Management .....	12
Room Location .....	13
Codes .....	13
Relative Termination Locations .....	13
Purpose and Usage .....	14
Size and Spacing .....	14
Floor Loading .....	14
Lighting .....	14
Ceiling .....	14
Entry Door .....	15
Surface Treatment .....	15
Electrical .....	15
Grounding .....	15
Telecommunications Closet Penetrations .....	15
Security and Fire Protection .....	16
Safety .....	16
Environmental Considerations .....	16
Labeling and Numbering Schemes .....	17
Documentation .....	18

# **Network Cabling Infrastructure: Design and Installation Standards**

This standards document is a living document. The references within this document are subject to revision and modifications as necessary. Changes will be required over time to maintain support and compatibility with changing construction techniques and technological developments. You should always verify that you have the most recent revision of this document and the incorporated standards before beginning design on telecommunications systems.

## **General**

### ***Scope***

This document is intended to provide a framework for the design specifications of new construction. These standards will apply to new building construction, and major renovations, and will also apply to major infrastructure upgrades and expansions.

When adding to existing installations, the following guidelines should be used. When the requirements call for adding less than twelve (12) cables in an existing closet, and patch panel space is available, the installation may maintain compliance with the standards in use at the time of the original installation. If twelve (12) or more cables are required, or if the existing patch panels do not have sufficient open space for the addition, this current standard should be followed.

### ***Drop Definition***

All telecommunications outlets in new facilities are to be non-specific multipurpose outlets capable of supporting data, voice, video, or any combination of the three. As such, a standard outlet in a typical user location shall consist of three color-coded ports and three wires. In the design and installation of these facilities, no distinction should be made to identify the intended use of the specific outlet; rather the outlet should simply be designated as a standard telecommunications outlet with the specifications which are detailed in this document.

### ***Brand Specific Statement***

Many items in this document specify brand name products such as Belden and Panduit. It is highly recommended that these specific brands and models be used to maintain continuity with existing installed systems.

In addition, the design as the staff at LSUHSC has been trained to support these products. Any deviation from these brand specifications would require additional training for technicians and analysts, as well as additional tools and separate spares inventory to support the new products.

Finally, LSUHSC has been approved to participate in an industry cooperative agreement between Belden and Panduit called Integrity. The Integrity program represents a significant increase in the long-term warranty of the cable plant installation provided when approved and trained installers provide the installation service with the products specified in this document.

## Industry Standards

These are to be used as *minimum* standards. An authorized representative of LSUHSC Computer Services must approve deviation from these standards in writing *prior to implementation of the deviation*. Please refer to the most current copy of the standard for complete details.

Following is a partial list of industry standards that must be adhered to. Compliance with the most current revision of these standards is required.

- STATE OF LOUISIANA, DIVISION OF ADMINISTRATION: FACILITY, PLANNING, & CONTROL, Guideline Requirements, Specifications, and Wiring Diagrams for Communications Cable/Wire and Related Building Facilities
- TIA/EIA Building Telecommunications Wiring Standards
  - TIA/EIA-526-7 Measurement of Optical Power Loss of Installed Single-Mode Fiber Cable Plant - OFSTP-7 (August 1998)
  - TIA/EIA-526-14 Optical Power Loss Measurements of Installed Multimode Fiber Cable Plant - OFSTP-14 (August 1998)
  - TIA/EIA-568-B.1 Commercial Building Telecommunications Cabling Standard Part 1: General Requirements (May 2001)
  - TIA/EIA-568-B.2 Commercial Building Telecommunications Cabling Standard Part 2: Balanced Twisted-Pair Cabling Components (May 2001)
  - TIA/EIA-568-B.3 Optical Fiber Cabling Components Standard (April 2000)
  - TIA/EIA-569 Commercial Building Standard for Telecommunications Pathways and Spaces (June 2001)
  - TIA/EIA-598 Optical Fiber Cable Color Coding (May 1995)
  - TIA/EIA-606 The Administration Standard for the Telecommunications Infrastructure of Commercial Buildings (February 1993)
  - TIA/EIA-607 Commercial Building Grounding and Bonding Requirements for Telecommunications (August 1994)
  - TIA/EIA-758 Customer-Owned Outside Plant Telecommunications Cabling Standard (April 1999)
- ISO Category 6
- Anixter Levels Channels Program, Levels 5, 6, & 7

# Unshielded Twisted Pair Cable

## *Cable and connectivity*

- New cable installations should consist of Belden Media Twist Level 7 (Category 6) cable. Part numbers are Belden 1872A and 1874A. 1874A must be used in plenum areas. Cables shall be color coded to match the connectors. Blue for data, red for voice, and electric ivory for spare/other.
- All new installations will use Panduit connectorization components rated for Category 6.
- All cable runs should be terminated on connectors and labeled on both ends. In the Horizontal Cross-connect (HC), all terminations must be on patch panels. In the work area, all terminations must be in securely mounted junction boxes or face plates.
- All cable runs should terminate in an HC located on the same floor as the work area being served.
- All patch cables for the HC are to be supplied by the installer and are to comply with the T568A designation identified in TIA/EIA-568-B.2. Patch cables shall be tested to meet a minimum rating of Category 5E or better.
- Drop definition: a drop is a single face plate with one or more cables using a common path and originating from the same location (Horizontal Cross-Connect). A standard drop, as per this specification, will consist of three cables.
- **LSUHSC Drop Standards**
  - There will be a minimum of three cables per standard drop. All cables will meet the specifications above.
  - Each drop will consist of one voice cable, one data cable, and a spare. Cable jacket color scheme will be as follows: data-blue; voice-red; spare-gray, white or other neutral color. When the appropriate cable is not available, substitutions may be considered.
  - Eight position jack pin/pair assignments will comply with T568A designation identified in TIA/EIA-568-B.2 *Commercial Building Telecommunications Cabling Standard Part 2: Balanced Twisted-Pair Cabling Components* (May 2001).
  - Voice patch panels will be located in a separate 19" rack, or cabinet. They will occupy, at a maximum, 50% of the voice rack. The remaining space in the voice rack will be reserved for housing patch panels terminating voice trunk lines.

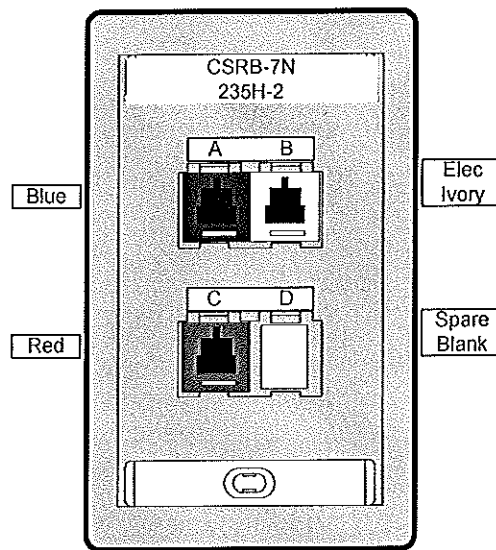


Figure 1: Panduit style faceplate

- The work area outlets shall consist of electric-ivory four-port faceplates, Panduit part number CBEEI using CHSR2 recessed module inserts. All connectors on faceplates in the work area should be Category 6 RJ45 jacks. Each faceplate will have three jacks. These are to be designated and color coded as follows: Data jacks are to be blue and positioned top left. Voice jacks are to be red and positioned at the bottom left. Spare jacks are to be electric ivory and positioned top right. Blanks shall be the same color as the faceplate (electric ivory) and positioned bottom right. All directional references above assume the installer is facing the front of the faceplate. The faceplate is illustrated in Figure 1.
- Use appropriate modular jacks which can support Gigabit Ethernet:
  - Panduit part number CJ688TPBU – Blue modular jack Cat 6, 8 position, 8 wire universal module
  - Panduit part number CJ688TPEI – Ivory modular jack Cat 6, 8 position, 8 wire universal module
  - Panduit part number CJ688TPRD – Red modular jack Cat 6, 8 position, 8 wire universal module
- When the work area outlets are installed in a horizontal orientation (such as on a table surface) and the ports face up, shuttered modular jacks, Panduit part number CJD688TBU (blue, other colors available) are required. The shuttered jacks are required to prevent the accumulation of dust and debris within the jack and on the pin contacts.
- Patch cables should be supplied by the installer for each blue and red jack in the closet. Colors for patch cables will match the connectors, so blue and red patch cables are required. One patch cable is required for each blue and red connector in the closet. Length of the cables shall be determined based upon the design of the closet, racks, patch panels, and electronics. The shorter length cables are desired. Patch cable lengths should be long enough to reach between the electronics ports and the patch panel ports and allow for proper routing of the patch cable through the cable management equipment installed. Typically patch cables will be 4, 7, or 10 feet in length and a combination of the various lengths may be required to provide adequate length for proper cable management without excessive extra lengths.
- It is the responsibility of the local desktop supporter(s) to supply and cross-connect the desktop node (printer, workstation, or other) to the work area outlet using a patch cable. Commercially available certified patch cables are inexpensive and highly recommended. Work area patch cables shall be tested to meet a minimum rating of Category 5E or better. Work area patch cables shall not exceed 5 meters (16 feet) as specified in TIA/EIA-568-B.1.

- Telephony Cross-Connect

- The following is a typical telephone cross-connect design. However, for each project the specifications and design of the telephone cross-connect are to be reviewed and approved by the LSUHSC Telecommunications Analyst.
- When the local service provider maintains a backboard-mounted demarcation, then the horizontal cable plant design shall include a transition system between the horizontal voice cable equipment rack and the backboard service provider blocks.
- The legacy telephony transition system shall consist of three components: (a) 19" rack mounted patch panels with RJ-45 connectors on the front and Telco 50 pin connectors on the rear of the panel, pins 4 and 5 are active, (Ortronics part number OR-808004041) (b) backboard mounted 66-style punch down blocks, (Amphenol part number S66M2-5W) (c) and 25 pair trunk cables with Telco connectors between the patch panels and the punch down blocks, with each 24 -port patch panel requiring one 25-pair trunk cable (Amphenol part number TP-1000L3-100).
- The length of the trunk cable is a function of the distance between the telecommunications room and the telephony service provider demarcation. It is recommended that all telephony transition system cabling span the entire distance to the service provider demarcation, (i.e. no intermediate cross-connect points).

## **Fiber Optic Cabling**

### ***Topology.***

The interbuilding fiber optic backbone shall be a star topology in compliance with TIA/EIA-568-B.1 *Commercial Building Telecommunications Cabling Standard Part 1: General Requirements* (May 2001). Fiber installation shall also comply with TIA/EIA-568-B.3 *Optical Fiber Cabling Components Standard* (April 2000).

### ***Interbuilding Cabling.***

All new interbuilding backbone cabling will consist of at least 24 strands of single-mode (8.3 micron) aluminum armored fiber optic cabling. Optical connector type shall be SC. Other cable specifications may be used if approved by the LSUHSC Enterprise Network Group. Approval is determined on a case-by-case basis and will take into consideration the type of installation required, distance, size of area being served, etc.

Depending upon the geographic location of the building being served, as well as its logical relationship to the campus environment, the number and type of strands may be increased. For example, a hybrid cable consisting of 12 strands of single-mode and 12 strands of multimode fiber may be recommended.

### ***Intrabuilding Cabling.***

New fiber optic riser systems within buildings will normally be designed in a star topology with a minimum of 12 strands of multimode (62.5/125 micron) and 12 strands of singlemode (8.3 micron) hybrid fiber to each intermediate and horizontal cross-connect from the main cross-connect. Optical connector type shall be SC.

### ***Installation Techniques.***

Fiber optic cabling shall be completely encapsulated for the entire length of the cable run. This encapsulation can be in innerduct, rigid metallic conduit, electrical metallic tubing, flexible metallic tubing, or other suitable enclosure that meets the requirements of the installation. Different types of encapsulation materials may be required in different areas such as intrabuilding or interbuilding paths. Conduit shall be installed in compliance with TIA/EIA-569 *Commercial Building Standard for Telecommunications Pathways and Spaces* (June 2001).



## Cable Pathways

All cable pathways and spaces must be in compliance with TIA/EIA-568-B.1 Commercial Building Telecommunications Cabling Standard Part 1: General Requirements (May 2001), and TIA/EIA-569 Commercial Building Standard for Telecommunications Pathways and Spaces (June 2001).

Cable paths should consist of a primary path above the main hallways of the building with individual drops exiting the main pathways at right angles towards the top of the wall above the intended telecommunications outlet location. A continuous support structure, such as cable tray, appropriately sized for the estimated number of cables should be used in the primary paths. The continuous support structure as well as individual wires for telecommunications outlet locations should be suspended above the ceiling by means of anchoring to the ceiling above the crawl area. No component of the cable system or support structure should be mounted to the suspended ceiling support wires. In areas with suspended ceiling tiles, all cabling and support structures should be installed above the ceiling tiles in such a way that will not interfere with the moving or removal of ceiling tiles. Care should be taken with cable paths so as not to obstruct areas, which require access for service, such as HVAC equipment.

Recommended Cable Tray manufacturer: Cablofil - easy to install in confined areas with overhead obstructions.

Specific attention should be paid to issues such as:

- Distance requirements for separation from EMI emitting devices and electrical equipment such as fluorescent lighting and power supplies.
- Pathways through firewalls must be properly sealed with an approved fire-rated material.
- Proper supporting of cables within cable paths to prevent the weight of cables from damaging cable or other equipment.
- Proper conditioning of floor and wall penetrations to prevent damage to cable jackets while installing the cable and throughout the cable life.
- Segregation and separation of different types of cables within a common pathway. For example, fiber optic cables should not be strapped to UTP cables with cable ties. Separate bundles should be maintained for each type of cable within a common pathway.
- Generally, fill rates for conduit, raceway, and other pathways should not exceed 50 to 60%.

## **Testing and Certification**

All testing shall be in compliance with TIA/EIA-568-B.2 Commercial Building Telecommunications Cabling Standard Part 2: Balanced Twisted-Pair Cabling Components (May 2001) and TIA/EIA-568-B.3 Optical Fiber Cabling Components Standard (April 2000).

All UTP cables shall be tested to 250 MHz on each cable pair. Test results shall be saved and submitted electronically to the building owner and LSUHSC Office of Computer Services upon completion of the installation. Format for electronic submission of test results shall be in a file format mutually agreed to by the contractor and LSUHSC Office of Computer Services.

## Conduit

For conduit and innerduct installations, the following practices should be adhered to:

- When using conduit greater than 2" inner diameter, innerduct shall be used within the entire length of the conduit unless a shielded cable is used.
- Innerduct should be cut and securely fastened at all conduit junction boxes.
- When 4" conduit is installed, it should be completely filled with innerduct.
- All empty innerduct and unfilled conduit shall contain pull strings to assist with future cable installations.
- All conduit, tubing, and innerduct shall be securely terminated on both ends with appropriate termination hardware and junction boxes.
- Conduit and tubing shall terminate in junction boxes appropriately sized for the type and quantity of cable being installed.
- Transitions between different types of tubing, conduit, and innerduct shall be made with a junction box unless a special adapter designed for such purpose is available.
- No section of cable shall be exposed except in the telecommunications rooms where service loops may be mounted on walls.
- Service loops shall be prepared on both ends of all fiber optic cables. Service loops of at least three times the longest telecommunications rooms' wall length are required. Average service loops should be 30-45 feet as space permits.
- Conduit shall have a maximum fill capacity of 50%. Innerduct may be filled to any capacity that can be achieved with a single pull without damaging the integrity of the cables being installed.
- Generally, fill rates for conduit, raceway, and other pathways should not exceed 50 to 60%. For example, our LSUHSC standard drop requires a ¾" conduit size. Other cable counts require conduit size as specified below (based on the size of LSUHSC standard cable):

Trade Size (conduit size) Specified in Inches	Number of Cables
1/2	1
3/4	3
1	5
1-1/4	9
1-1/2	13
2	21
2-1/2	38
3	57
3-1/2	75
4	96

- All conduits shall use sweeping bends for directional changes.
- Conduit shall be clearly labeled on the exterior surface, at least every 50 feet, with the words "Fiber Optic Cabling / LSUHSC CSVCS". Labeling shall consist of black letters, at least 1.5" – 2" high, on a white or yellow background. Labels should be self-adhesive labels suitable for outdoor installation. Innerduct not contained within conduit shall also be labeled in the same manner.

## Telecommunications Rooms

All telecommunications rooms must be designed and sized in compliance with TIA/EIA-568-B.1 Commercial Building Telecommunications Cabling Standard Part 1: General Requirements (May 2001), and TIA/EIA-569 Commercial Building Standard for Telecommunications Pathways and Spaces (June 2001).

Telecommunications rooms should be a minimum of 10ft by 7ft, (see *Size and Spacing* section below) and requirements may dictate multiple or larger rooms based upon issues such as size of the area being served, density of telecommunications outlets in service area, and additional equipment that must be located in the telecommunications rooms. For floor areas smaller than 5000 ft<sup>2</sup>, Annex B, Section B.3 of TIA/EIA-569-A provides suggestions for smaller telecommunications rooms which may be considered. These deviations require approval from the LSUHSC Enterprise Network Group.

Telecommunications rooms to support data, voice and additional services (such audio and video and video conferencing) shall be a minimum of 10ft by 16ft. Smaller deviations from this standard require approval from the LSUHSC Enterprise Network Group.

### ***Relay Rack and Vertical Cable Management***

A minimum of three seven foot , 19" Chatsworth Products Inc (CPI) equipment racks (part number 55053-503) are to be installed in a single line, side-to-side, and securely fastened. 6" double-sided, full-length CPI vertical cable managements (part number 30095-503) are required between each rack as well as at both ends of the line of racks. Racks should be securely mounted to the floor and braced with ladder tray to the walls, which also serves as the cable path and support structure for all copper and fiber cabling terminated in the racks. The racks shall be positioned within the telecommunications room to allow access to both the front and rear of all racks. When planning access to the rear of the racks, consideration should be made for the fact that equipment mounted in the rack will often extend at least 24 –30 inches behind the rack. As such, adequate allowance shall be made to the rear of the rack to allow for access behind the racks even after equipment is permanently installed.

Please note: More than three racks may be required. The actual number is to be specified by the Enterprise Network Group.

### ***Patch Panel and Horizontal Cable Management***

A 48-port Panduit patch panel (part number CPPL48WBL) should be installed at the top of the rack followed by Panduit horizontal cable management (part number WMP1E). The above layout should be repeated to appropriately accommodate the number of cables.

Data (blue) and spare (white or ivory) cables will terminate on their respective patch panels, located in the same telecommunications room. Data cables are to be terminated in patch panel(s) starting at the top of the left rack (when facing the racks from the front). Spare cables are to be terminated in patch panel(s) starting in the middle of the same rack. This placement should provide ample contiguous room for growth for both data and spare cables.

The fiber distribution panel should be installed at the top of the middle rack (in a 3-rack system). The remaining space in this rack is reserved for network equipment.

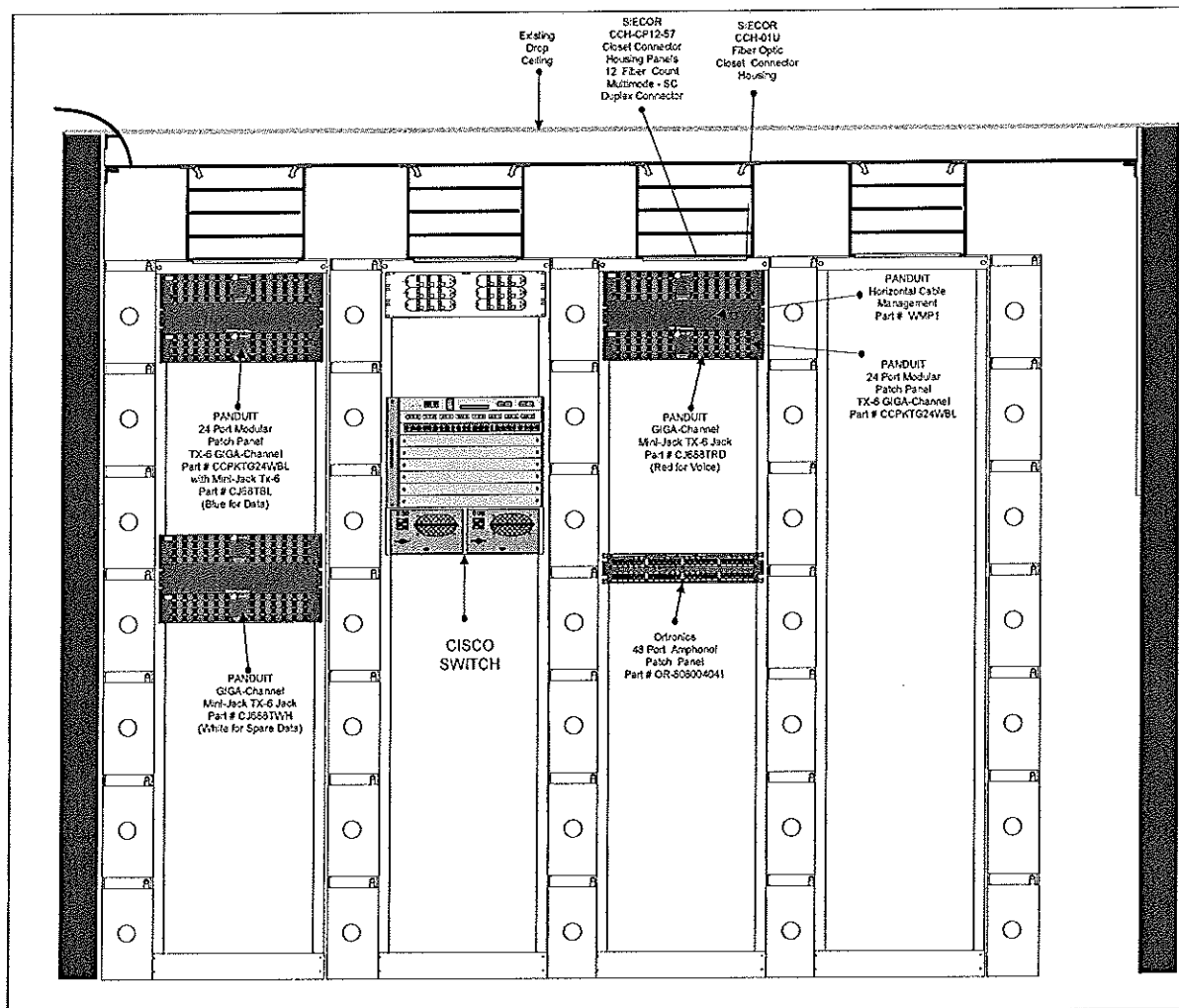
Voice (red) cables will terminate on panel(s) in the third rack (right-most rack in a 3-rack system). In the middle of this rack, install an appropriate number of Ortronics 48-port 50-pair voice (telco) patch panel(s) (Ortronics part number 808004041).

Use appropriate modular jacks which can support Gigabit Ethernet:

Panduit part number CJ688TPBU – Blue modular jack Cat 6, 8 position, 8 wire universal module

Panduit part number CJ688TPEI – Ivory modular jack Cat 6, 8 position, 8 wire universal module

Panduit part number CJ688TPRD – Red modular jack Cat 6, 8 position, 8 wire universal module



**Figure 2: Typical Telecommunications Room Rack Layout**

### ***Room Location***

The telecommunications closet shall be located as close as practicable to the center of the area served and preferably in the core area. The room shall not be located adjacent to electrical and mechanical areas or other areas that are likely to exhibit EMI.

### ***Codes***

All applicable local, state, and federal codes shall be observed for the design of the telecommunications closet.

### ***Relative Termination Locations***

Horizontal pathways shall terminate in the telecommunications closet located on the same floor as the area being served.

## ***Purpose and Usage***

Telecommunications closet space shall be dedicated to the telecommunications function and related support facilities. Telecommunications closet space should not be shared with electrical installations other than those for telecommunications.

This document assumes the shared use of the telecommunications closet space for the telecommunications needs of all occupants of the area served.

Equipment not related to the support of the telecommunications closet (e.g., piping, ductwork, pneumatic tubing, etc.) shall not be installed in, pass through, or enter the telecommunications closet.

## ***Size and Spacing***

There shall be a minimum of one telecommunications closet per floor. Additional closets (one for each area up to 1000 m<sup>2</sup> (10,000 ft<sup>2</sup>), should be provided when:

- a) the floor area to be served exceeds 1000 m<sup>2</sup> (10,000 ft<sup>2</sup>); or
- b) the horizontal distribution distance to the work area exceeds 90 m (295 ft).

Based on one work area per 10 m<sup>2</sup> (100 ft<sup>2</sup>), the telecommunications closet should be sized as detailed in the following table, which provides minimum acceptable closet dimensions based on areas served up to and not exceeding 1000 m<sup>2</sup> (10,000 ft<sup>2</sup>).

Serving Area	Minimum Closet Size
Ft <sup>2</sup>	Feet
10000	10 x 11
8000	10 x 9
5000	10 x 7
For support of additional services	10 x 16

Table 1: Telecommunications closet size

## ***Floor Loading***

Telecommunications closets shall be located on floor areas designed with a minimum floor loading of 2.4 kPa (50 lbf/ft<sup>2</sup>). It shall be verified that concentrations of proposed equipment do not exceed the floor loading limit. If unusually heavy equipment is anticipated, these specifications may have to be increased.

## ***Lighting***

Lighting shall be a minimum of 500 lx (50 foot candles) measured 1 m (3 ft) above the finished floor, mounted 2600 mm (8.5 ft) minimum above finished floor.

NOTE - Lighting fixtures should not be powered from the same electrical distribution panel as the telecommunications equipment in the telecommunications closet. Dimmer switches should not be used and emergency lighting and signs should be properly placed such that an absence of light will not hamper emergency exit.

## ***Ceiling***

For maximum flexibility, a false ceiling shall not be provided.

## **Entry Door**

The door shall be a minimum of 910 mm (36 in) wide and 2000 mm (80 in) high, without doorsill, hinged to open outward (codes permitting) or slide side-to-side, or be removable, and fitted with a lock.

## **Surface Treatment**

Floors, walls, and ceiling shall be treated to eliminate dust. Finishes shall be light in color to enhance room lighting.

A minimum of two walls should be covered with rigidly fixed 20 mm (¾ in) A-C plywood, preferably void free, 2440 mm (8 ft) high, capable of supporting attached equipment. Plywood should be either fire-rated or covered with two coats of fire retardant paint. At least one covered wall shall be the wall behind the rear of the equipment racks.

## **Electrical**

A minimum of two dedicated 120 V nominal, non-switched, AC duplex electrical outlet receptacles, each on a separate branch circuit, shall be provided for equipment power. These receptacles should be rated at 20 A and be connected to a 20 A branch circuit. In addition, identified and marked convenience duplex outlets shall be placed at 1.8 m (6 ft) intervals around the perimeter walls, at a height of 150 mm (6 in) above the floor. If standby power is available, automatic switchover of power should be provided.

Some telecommunications equipment require larger circuits such as 240 V, 30 A. Therefore, the specific electrical circuit requirements and outlet locations must be specified and coordinated in advance with the telecommunications system designers.

NOTE - In many cases, it is desirable that a dedicated power panel or service disconnect box be installed to serve all equipment in the room.

## **Grounding**

Access shall be made available to the telecommunications grounding system specified by TIA/EIA-607 *Commercial Building Grounding and Bonding Requirements for Telecommunications* (August 1994). References from the standard follow.

Each telecommunications closet and equipment room shall contain a telecommunications grounding bussbar (TGB). The TGB shall be located inside the closet/room and be insulated from its support; a 50 mm (2 inch) separation is recommended. The TGB shall be located so as to provide the greatest flexibility and accessibility for telecommunications system grounding, (minimizing lengths and number of bends of the bonding conductor to the TGB, but within constraints of Clause 5).

Multiple TGBs may be installed within the same closet to aid in minimizing bonding conductor lengths and terminating space. In all cases multiple TGBs within a closet shall be bonded together with a conductor sized per 5.3.4.1.

Where a panel board for telecommunications is not installed in the telecommunications closet, the TGB should be located near the backbone cabling and associated terminations. In addition, the TGB should be located so that the grounding conductors are as short and straight as possible.

## **Telecommunications Closet Penetrations**

To facilitate cable pulling, sleeves and slots should be located adjacent to the door. Sleeves or slots shall not be left open, except during cable installation, and shall be properly fire stopped per applicable codes immediately after the wiring is completed.

The quantity of backbone pathways using 103 (4) trade size conduits or sleeves shall be: one sleeve or conduit per 5000 m<sup>2</sup> (50,000 ft<sup>2</sup>) of usable floor space served by that backbone system, plus two spares for a minimum of three sleeves. Where a slot is used it shall have a minimum 25 mm (1 in) curb around the top of the slot. Where a sleeve is used, it shall extend 25-75 mm (1-3 in) above the floor.

Horizontal penetrations shall be sufficient to allow access to the main horizontal distribution pathway and allow the placement of a 12" x 4" ladder tray through the penetration.

### ***Security and Fire Protection***

The telecommunications closet is preferably located in an accessible area on each floor, e.g., a common hallway. Access to shared-use space shall be controlled by the building owner or agent.

Fire protection of the telecommunications closet, if required, shall be provided as per applicable code.

Sprinkler heads, if required, shall be provided with wire cages to prevent accidental operation.

Proposed design of the fire protection within the room shall be reviewed and certified by a licensed sprinkler and fire safety specialist. Coordination with the State Fire Marshall may be required, especially if the sprinkler system is disabled in these areas.

### ***Safety***

A review of the current location, extent, and condition of asbestos will be required. The construction of the room must be such that the safety of the occupants of the building is not jeopardized before, during, or after construction. If asbestos is determined to exist within the open areas of the telecommunications room, sufficient notification shall be prominently displayed so that those entering the room are informed of the risks of doing so.

### ***Environmental Considerations***

HVAC shall be included in the design of the telecommunications closet to maintain a temperature the same as the adjacent office area. Planning for eventual provisioning, as required, of continuous HVAC (24 hours per day and 365 days per year) shall be included in the initial design. A positive pressure shall be maintained with a minimum of one air change per hour, or as required by applicable code. When active devices (heat producing equipment) are present, a sufficient number of air changes should be provided to dissipate the heat. If a standby power source is available in the building, the HVAC system serving the telecommunications closet should be connected to the standby supply.



## Labeling and Numbering Schemes

Labeling is a critical part of any network infrastructure installation and administration. Proper labeling should be semi-permanent, logical, and machine printed. In addition, labeling should have common characteristics on both ends of a given installation so that an administrator can easily correlate two end points.

Labeling shall be in compliance with TIA/EIA-606 *The Administration Standard for the Telecommunications Infrastructure of Commercial Buildings* (February 1993), Section 8, Labeling and Color Coding.

Labeling should address the following objectives:

1. Identify the location of the opposite end of the cable by a sequence number
2. Identify the intended use or type of cable at the faceplate and in the telecomm closet
3. Provide a reference as a unique identifying number

Specific labeling requirements are:

- Label both ends of all cables with a common naming scheme so that both ends of the cable have the same identifying code on the terminating hardware. For example, the faceplate and patch panel or other termination device should be labeled. It is not necessary to label the cable itself, if the cable is permanently terminated on a patch panel with appropriate labeling.
- Patch panels should be labeled to uniquely identify each and every cable within the building. Typically, a room number, faceplate sequence number, and a switch port will provide a unique labeling scheme within a building. The patch panel port label should contain the same room number and sequence number as the faceplate that terminates the other end of the cable. When possible, cables should be installed in the patch panels in sequence number order to simplify locating specific ports.
- Each faceplate should be labeled to allow identification of the serving telecommunications room as well as the room number and faceplate sequence number. For instance in the LSUHSC Clinical Sciences research Bldg. each floor is served by two telecommunications rooms (one on North side and the other on the South side). Every faceplate should be labeled with the letter "S" for South or "N" for North followed by "-Room#-FaceplateSequence#-SwitchPort#". Every faceplate in the building should be numbered similar to the following: "N-135A-1-49". The preceding number indicates, from left to right, a) North side of building, b) office room number, c) faceplate sequence number, and d) 49<sup>th</sup> port on the switch. The patch panel numbering scheme serving the same location will omit the telecommunications room part of the number. If there is only one telecommunications room per floor, the labeling scheme would be as follows: 135A-1-49.
- Multiple jacks within a room should be lettered (sequentially numbered) in a clockwise manner. This should begin with the first faceplate to the left of the main doorway as you enter the room. The main doorway is the one that provides access to a common area, such as a hallway or lobby.

## Documentation

Documentation of installed systems is as critical to successful deployment and administration as the planning of the proposed system. Documentation shall be submitted in mutually compatible electronic format, such as Microsoft Excel (.xls).

The documentation required is listed below . It will serve for a successful execution of the Panduit Integrity warranty. The Integrity warranty is a joint offering of a partnership between Panduit and Belden corporations.

Documentation required includes the following:

- As-built drawings are required depicting the path of all backbone and vertical cabling as well as the primary path for horizontal cabling. The primary path is considered to be the common path shared by multiple cable runs. This includes the origination at the telecommunications closet and the main pathway(s). Such paths include those hallways having individual cables before they are separated. These paths are directed towards the termination in the work areas.
- As-built documentation of all floor plans for telecommunications closets including physical location of racks, trays, and penetrations. Proposed floor plans will be provided by the LSUHSC Computer Services Department. As-built drawings will simply require the proposed drawings be updated to reflect any deviations from the original layout .
- A logical representation of each patch panel for both fiber and copper is required.
- For fiber patch panels, the documentation should allow an analyst to quickly and easily determine exactly which cables and strands terminate in the individual connector housings.
- Test results for every cable installed are required. The test results shall be submitted in a mutually agreeable electronic format.

# Exhibit D

## Addendum to LSUHSC Network Cabling Infrastructure Design and Installation Standards

Cable installation must consist of Belden Media Twist Level 7 (Category 6) cable. Part numbers are Belden 1872A and 1874A (Plenum). Cables shall be color coded to match the connectors. Blue for data, red for voice, and electric ivory for spare/other.

All new installations will use Panduit connectorization components rated for Category 6.

All cable runs should terminate in the designated Cross Connect.

All patch cables are to be supplied by the installer and are to comply with the T568A designation identified in TIA/EIA-568-B.2.

Cable Trays: Cablofil Wire Cable Tray 4"x8": CAB CF105/200EZ, Cablofil Center Hanger 12": CAB FASPC300PG, Cablofil 3/8" hex nuts, flat washers, Cablofil Slice Bar: CAB EDRN, Cablofil T90 Kit: CAB EZ T 90

Interbuilding Fiber: Corning C012K81-33130-A1 (12 strand MM mic riser aluminum armored)

Utilize Corning fiber optic SC patch panels: CRCCH-01U-1291 with 2 SC 6-fiber MM adapter panels

Connector CR95-000-41SC Unicam connectors ceramic tip

Testing and Certification: All UTP cables must be tested to 250 MHz on each cable pair and be capable of Gigabit Ethernet. Test results must be saved and submitted electronically to the LSUHSC Office of Computer Services upon completion of the installation.

The specified number of seven foot, 19" equipment racks should be installed in a single line, side-to-side, and securely fastened. Five 6", double-sided, full-length vertical wire management rails are required between each rack as well as at both ends of the line of racks. Racks should be securely mounted to the floor and braced with ladder tray to the walls, which also serves as the cable path and support structure for all copper and fiber cabling terminated in the racks. The racks shall be positioned within the telecommunications room to allow access to both the front and rear of all racks. When planning access to the rear of the racks, consideration should be made for the fact that equipment mounted in the rack will often extend at least 24 –30 inches behind the rack. As such, adequate allowance shall be made to the rear of the rack to allow for access behind the racks even after equipment is permanently installed. Refer to proposal drawings.

Racks: Chatsworth CPI55053-503

Vertical Managements: CPI30095-503

Install ladder system inside telecommunications room for routing internal wires and drops down to each vertical management.

All phone runs (from the phone position to the telephone patch panels) should be patched with gray patch cables.

All patch cables from the patch panels to the network electronics must be patched as well. If the electronics are not in place at the time the installer is ready to begin patching, the installer must return to complete this work as soon as the electronics are rack-mounted. Patch cables connecting to the network electronics should correspond to the blue jacks on the patch panel.

Port mapping documentation must be provided to the site and to LSUHSC Computer Services in electronic format mutually agreed upon by the installer and LSUHSC Computer Services.

If wire molding is necessary, Panduit wire molding is to run from the drop ceiling to a Panduit box located approximately 15" off the floor.

Raceway part numbers: Panduit PD LD5EI6-A (Latching Raceway 6' Strip)

Single gang Panduit PD JB1EI-A (deep device box)

All raceway must be custom fitted with Panduit connectors such as drops ceiling fittings and cover clips. Panduit raceway must be installed in a permanent fashion by using screws, anchors and studs.

# Schedule A

## SERVICES

Provide pricing for the following. These should be provided on the price sheet included for materials. Do not include the cost of any materials.

TYPE	DESCRIPTION	ESTIMATED QUANTITY	STANDARD PRICE	ADDITIONAL COST FOR OUTSIDE NORMAL BUSINESS HOURS	ADDITIONAL COST FOR OUTSIDE NEW ORLEANS
Standard Drops	Base price to pull up to 4 data cables to one location routed in wall. (Avg. Length of 200ft)	800 drops	per drop	per drop	per drop
	Price to pull a Cat 3 data cable (per foot)	10 drops	per foot	per foot	per foot
	Price to pull a Category 5e data cable (per foot)	75 drops	per foot	per foot	per foot
	Price to pull a Category 6 data cable (per foot)	25 drops	per foot	per foot	per foot
	Price to install receptacle (per foot)	800	per foot	per foot	per foot
	Price to terminate non plenum cable with modular jack	1000	per termination	per termination	per termination
	Price to terminate plenum cable with modular jack	2000	per termination	per termination	per termination
	Price to terminate non-plenum cable with RJ45 connector	750	per termination	per termination	per termination
	Price to terminate plenum cable with RJ45 connector	350	per termination	per termination	per termination
	Price to remove a data cable (per drop)	50 drops	per drop	per drop	per drop
Telecommunications Closets	Price to move existing drop (up to 4 cables, per foot excluding labels, terminations, etc)	50 drops	per drop	per drop	per drop
	Price to label modular jack	4000 jacks	per jack	per jack	per jack
	Price to patch cable in closet and provide electronic documentation	2000 jacks	per jack	per jack	per jack
	Price to test Copper Cat 5, 5e, & 6, record results, and provide data electronically (per test).	2000 tests	per test	per test	per test
	Price to install one wall mount cabinet (2 to 4 feet)	10 cabinets	per cabinet	per cabinet	per cabinet
	Price to install rack (includes securing to floor and walls) (per rack)	10 racks	per rack	per rack	per rack
	Price to ground rack (existing building ground)	10 racks	per rack	per rack	per rack
	Price to install electronics in a cabinet or rack	10 installs	per install	per install	per install
	Price to install one patch panel in a cabinet or rack	175 panels	per panel	per panel	per panel
	Price to label patch panel (per port)	4200 ports	per port	per port	per port
Fiber-Optic	Price to install ladder system. (per foot)	100 feet	per foot	per foot	per foot
	Price to install vertical cable management. (per management)	12 managements	per management	per management	per management
	Price to install horizontal cable management. (per management)	175 managements	per management	per management	per management
	Price to penetrate firewall.	50 penetrations	per penetration	per penetration	per penetration
	Price to install sleeve in firewall.	50 sleeves	per sleeve	per sleeve	per sleeve
	Price to seal firewall penetration per code and facility requirements.	50 penetrations	per penetration	per penetration	per penetration
	Price to penetrate sheetrock wall.	50 penetrations	per penetration	per penetration	per penetration
	Price to seal sleeve in sheetrock wall.	50 sleeves	per sleeve	per sleeve	per sleeve
	Price to seal sheetrock wall penetration per code and facility requirements.	50 penetrations	per penetration	per penetration	per penetration
	Price to seal cinder block wall penetration per code and facility requirements.	50 penetrations	per penetration	per penetration	per penetration
Routes	Price per foot to pull a copper trunk cable. (up to 300 pair)	3000 feet	per foot	per foot	per foot
	Price to terminate copper riser 25 pair telco connectors	25 terminations	per termination	per termination	per termination
	Price to terminate copper riser punch to 110 or 66 block. (25 pair)	25 terminations	per termination	per termination	per termination
	Price to install fire rated plywood. (up to 4 x 8)	30 installs	per install	per install	per install
	Price per foot to pull fiber-optic cable. (existing path)	2000 feet	per foot	per foot	per foot
	Price to label fiber optic cable. (per label)	10 labels	per label	per label	per label
	Price to install fiber enclosure in rack.	50 installs	per install	per install	per install
	Price to label fiber termination in enclosure.	50 labels	per label	per label	per label
	Price to terminate and label one single mode strand.	25 terminations	per termination	per termination	per termination
	Price to terminate and label one multi-mode strand (62.5 µm).	25 terminations	per termination	per termination	per termination
Routes	Price to terminate one multi-mode strand (50 µm).	25 terminations	per termination	per termination	per termination
	Price to terminate one OM-4 strand.	48 strands	per strand	per strand	per strand
	Price to fusion splice one single mode strand.	100 tests	per test	per test	per test
	Price to test fiber cable, record, and furnish test result. (per strand)	100 tests	per test	per test	per test
	Price per foot to install 1/2" conduit. (EMT)	100 feet	per foot	per foot	per foot
	Price per foot to install 3/4" conduit. (EMT)	500 feet	per foot	per foot	per foot
	Price per foot to install 1" conduit. (EMT)	300 feet	per foot	per foot	per foot

SERVICES

	Price per foot to install 1 1/2" conduit (EMT)	150 feet	per foot	per foot	per foot	per foot	per foot
	Price per foot to install 2" conduit (EMT)	600 feet	per foot	per foot	per foot	per foot	per foot
	Price per foot to install 2 1/2" conduit (EMT)	100 feet	per foot	per foot	per foot	per foot	per foot
	Price per foot to install 3" conduit (EMT)	100 feet	per foot	per foot	per foot	per foot	per foot
	Price per foot to install 3 1/2" conduit (EMT)	100 feet	per foot	per foot	per foot	per foot	per foot
	Price per foot to install 4" conduit (EMT)	100 feet	per foot	per foot	per foot	per foot	per foot
	Price per foot to install 1/2" conduit (rigid aluminum)	100 feet	per foot	per foot	per foot	per foot	per foot
	Price per foot to install 3/4" conduit (rigid aluminum)	500 feet	per foot	per foot	per foot	per foot	per foot
	Price per foot to install 1" conduit (rigid aluminum)	300 feet	per foot	per foot	per foot	per foot	per foot
	Price per foot to install 1 1/2" conduit (rigid aluminum)	150 feet	per foot	per foot	per foot	per foot	per foot
	Price per foot to install 2" conduit (rigid aluminum)	600 feet	per foot	per foot	per foot	per foot	per foot
	Price per foot to install 2 1/2" conduit (rigid aluminum)	100 feet	per foot	per foot	per foot	per foot	per foot
	Price per foot to install 3" conduit (rigid aluminum)	100 feet	per foot	per foot	per foot	per foot	per foot
	Price per foot to install 3 1/2" conduit (rigid aluminum)	100 feet	per foot	per foot	per foot	per foot	per foot
	Price per foot to install 4" conduit (rigid aluminum)	100 feet	per foot	per foot	per foot	per foot	per foot
	Price per foot to install interduct	1000 feet	per foot	per foot	per foot	per foot	per foot
	Price to install, attach, support cable tray (per foot)	500 feet	per foot	per foot	per foot	per foot	per foot
	Price to directional bore (per foot)	1000 feet	per foot	per foot	per foot	per foot	per foot
	Price to trench (per foot)	300 feet	per foot	per foot	per foot	per foot	per foot
	Price to hand dig (per foot)	30 feet	per foot	per foot	per foot	per foot	per foot
	Price to install hand hole (24x36x24)	6 holes	per hole	per hole	per hole	per hole	per hole
	Price to install J-hooks (per hook)	1000 hooks	per hook	per hook	per hook	per hook	per hook
Other	Install motorized wall-mounted projector screen	2 screens	per screen	per screen	per screen	per screen	per screen
	Install motorized flush ceiling mounted projector screen	2 screens	per screen	per screen	per screen	per screen	per screen
	Install pull-down wall-mounted projector screen	2 screens	per screen	per screen	per screen	per screen	per screen
	Install pull-down ceiling-mounted projector screen	2 screens	per screen	per screen	per screen	per screen	per screen
	Install flush mounted wall speakers	4 speakers	per speaker	per speaker	per speaker	per speaker	per speaker
	Install flush mounted ceiling speakers	4 speakers	per speaker	per speaker	per speaker	per speaker	per speaker
	Install surface mounted wall speakers	4 speakers	per speaker	per speaker	per speaker	per speaker	per speaker
	Install surface mounted ceiling speakers	4 speakers	per speaker	per speaker	per speaker	per speaker	per speaker
	Pull and terminate Creston Crescat cable	400 feet	per foot	per foot	per foot	per foot	per foot
	Pull pre-made DVJ cables	400 feet	per foot	per foot	per foot	per foot	per foot
	Pull and terminate VGA cables, pull pre-made VGA cables	400 feet	per foot	per foot	per foot	per foot	per foot
	Pull and terminate 5-wire cables	800 feet	per foot	per foot	per foot	per foot	per foot
	Pull and terminate coax cable (can any grade)	800 feet	per foot	per foot	per foot	per foot	per foot
	Install suspended ceiling projector mounts	4 mounts	per mount	per mount	per mount	per mount	per mount
	Install ceiling flat projector mounts	4 mounts	per mount	per mount	per mount	per mount	per mount
	Complete low-voltage electrical connections for motorized screens	8 screens	per screen	per screen	per screen	per screen	per screen
	Install ceiling-mounted television (up to 65")	5 televisions	per television	per television	per television	per television	per television
	Install wall-mounted television (up to 65")	5 televisions	per television	per television	per television	per television	per television
	Price for expedited response (flat rate per technician)	5 hours	per hour	X	per hour	per hour	per hour
Miscellaneous	Price to make a 4" floor penetration.	15 penetrations	per penetration	per penetration	per penetration	per penetration	per penetration
	Price to x-ray slab for 4" penetration.	10 penetrations	per penetration	per penetration	per penetration	per penetration	per penetration
	Price to seal a 4" floor penetration per code and facility requirements (see bid)	15 penetrations	per penetration	per penetration	per penetration	per penetration	per penetration
	Price to install a thimble in a 4" floor penetration	15 penetrations	per penetration	per penetration	per penetration	per penetration	per penetration
	Install a microwave or other small antenna on existing mast.	5 antennas	per antenna	per antenna	per antenna	per antenna	per antenna
	Price to install antenna mast.	5 antennas	per antenna	per antenna	per antenna	per antenna	per antenna
	Price to pull coaxial cable (per foot)	300 feet	per foot	per foot	per foot	per foot	per foot
	Price to seal external coax connectors from moisture and corrosion	10 connectors	per connector	per connector	per connector	per connector	per connector
	Labor rate for technician exclusive of fixed rate pricing listed above (per hour)	200 hours	per hour	X	per hour	per hour	per hour
	Labor rate for helper exclusive of fixed rate pricing listed above (per hour)	200 hours	per hour	X	per hour	per hour	per hour

ALL ELECTRICAL TERMINATIONS ARE LOW VOLTAGE  
 \* Drop ceilings  
 \*\* Hard ceilings, difficult access, route, or working conditions

## Schedule B

### LSUHSC AUXILIARY ENTERPRISES 2009 NETWORK WIRING MATERIALS LIST

For items listed below, all available color variations (listed or not) are to be included at the same price.  
All items are to be priced by the each or foot regardless of how they may be packaged or sold.  
Chatsworth, Corning, Panduit, Ortronics, and Belden are Brand Specific and no substitutions will be allowed.  
Belden Cat6 Mediatwist cable will be purchased separately by LSUHSC Auxiliary Enterprises.  
Quantities are estimates only, no quantities are guaranteed.  
All items must be bid.

QTY	PART#	DESCRIPTION	UNIT PRICE
<b><u>CHATSWORTH BRAND NAME</u></b>			
5	CPI 12100-710	12" CABLE RUNWAY RADIUS DROP	
15	CPI 10250-712	12" RUNWAY (10' SECTION)	
5	CPI 12100-716	18" CABLE RUNWAY RADIUS DROP	
5	CPI 10250-718	18" RUNWAY (10' SECTION)	
20	CPI 11301-701	CABLE RUNWAY BUTT-SPLICE KIT	
10	CPI 11959-715	CABLE RUNWAY CORNER BRACE KIT	
50	CPI 11303-000	CABLE RUNWAY J-BOLT KIT	
20	CPI 11302-701	CABLE RUNWAY JUNCTION SPLICE KIT	
30	CPI 10642-001	CABLE RUNWAY PROTECTIVE END CAP	
10	CPI 11746-718	18" CABLE RUNWAY TRIANGULAR SUPPORT BRACKET	
20	CPI 11421-712	12" CABLE RUNWAY WALL ANGLE SUPPORT KIT	
10	CPI 11421-718	18" CABLE RUNWAY WALL ANGLE SUPPORT KIT	
5	CPI 11421-112	12" CABLE RUNWAY SUPPORT KIT	
5	CPI 11310-001	CABLE RUNWAY CEILING KIT	
10	CPI 10595-112	CABLE RUNWAY MOUNTING PLATE	
20	CPI 10595-712	RACK TO RUNWAY MOUNTING PLATE	
20	CPI 55053-703	84"H X 19"W RACK	
10	CPI 11746-712	CABLE RUNWAY SUPPORT BRACKET	
20	CPI 30162-703	VERTICAL CABLE MANAGER CCS	
2	CPI T1053-742	FREESTANDING T-SERIES CABINET	
10	CPI 10488-701	JUNCTION SWIVEL SPLICE KIT	
2	CPI 11790-725	RACK TO RUNWAY MOUNTING PLATE	
5	CPI 10489-701	CABLE RUNWAY SPLICE KIT	
2	CPI 13602-718	EASYSWING WALL MOUNT RACK	
<b><u>CORNING BRAND NAME</u></b>			
1000	CR 012CSF-T4131D20 (FT)	12-F 50/125 LT IN/OUT RISER FIBER CABLE	
1500	CR 024X81-TBD-A1 (FT)	12 62.5UM/ 12 8.3 SM FIBER CABLE	
1000	CR 024J88-33130-A3 (FT)	24-F 62.5/125 ARMORED PLENUM FIBER CABLE	
1000	CR 024E88-33131-A3 (FT)	24-F 8.3/125 TB PLENUM ARMORED MIC	
50	CR 95-050-48-SP	SC HEAT-CURE CONNECTOR 50/125	
100	CR 95-100-48-SP	SC CONNECTOR 125MM CER	
75	CR 95-101-41-SP	SC CONNECTOR 62.5/125 CER ANAEROBIC	
150	CR 95-201-41-SP	SC CONN 8.3/125 CER ANAEROBIC	
5	CR CCH-02U	24/96-F RACK-MT ENCLOSURE	
5	CR CCH-04U	72/288-F RACK-MT ENCLOSURE	
5	CR CCH-CP12-15	12 PORT PANEL ST MM LOADED	
10	CR CCH-CP12-59	6 PORT PANEL SC DUP SM LOADED	
5	CR CCH-CP12-G7	6 PORT PANEL SC DUP 50/125 MM	
20	CR FAN-BT25-12	BUFFER TUBE FAN-OUT KIT	
<b><u>PANDUIT BRAND NAME</u></b>			
1000	PD CBEEI	EXEC SERIES FACEPLATE FRAME/BEZEL, SINGLE GANG	
2000	PD CHSR2EI	2 MOD SPACE, 1/2 SIZE, ALOPED, RECESSED MOD INSERT	
100	PD CJ5E88TBU	CAT5E MODULAR JACK	
2500	PD CJ688TPBU	CAT6 MODULAR JACK	
800	PD CJ688TPEI	CAT6 MODULAR JACK	
50	PD CJ688TPGR	CAT6 MODULAR JACK	
800	PD CJ688TPRD	CAT6 MODULAR JACK	
150	PD CMBEI-X	MINI-COM BLANK	
75	PD CPPL24WBLY	MINI-COM 24 PORT SNAP-IN PATCH PANEL	
25	PD CPPL48WBLY	MINI-COM 48 PORT SNAP-IN PATCH PANEL	

20	PD DCF10IW-X	RACEWAY DROP CEILING FITTING	
20	PD DCF5EI-X	RACEWAY DROP CEILING FITTING	
250	PD JBX3510EI-A	JUNCTION BOX	
350	PD LD10EI8-A (8'SECTION)	8' LATCHING RACEWAY	
150	PD LD5EI8-A (8'SECTION)	8' LATCHING RACEWAY	
10	PD UTPCH10BU	CAT5E PATCH CORD,10'	
10	PD UTPCH12BU	CAT5E PATCH CORD,12'	
10	PD UTPCH14BU	CAT5E PATCH CORD,14'	
10	PD UTPCH20BU	CAT5E PATCH CORD,20'	
10	PD UTPCH25BU	CAT5E PATCH CORD,25'	
10	PD UTPCH30BU	CAT5E PATCH CORD,30'	
10	PD UTPCH3BU	CAT5E PATCH CORD,3'	
10	PD UTPCH5BU	CAT5E PATCH CORD,5'	
10	PD UTPCH7BU	CAT5E PATCH CORD,7'	
10	PD UTPSP10BU	CAT6 PATCH CORD,10'	
10	PD UTPSP12BU	CAT6 PATCH CORD,12'	
50	PD UTPSP14BU	CAT6 PATCH CORD,14'	
10	PD UTPSP20BU	CAT6 PATCH CORD,20'	
10	PD UTPSP25BU	CAT6 PATCH CORD,25'	
50	PD UTPSP30BU	CAT6 PATCH CORD,30'	
10	PD UTPSP3BU	CAT6 PATCH CORD,3'	
10	PD UTPSP5BU	CAT6 PATCH CORD,5'	
1000	PD UTPSP7BU	CAT6 PATCH CORD,7'	
30	PD WMP1E	CABLE MGMT DUCT HORIZONTAL	
75	PD WMPSE	CABLE MANAGER HORIZONTAL	
	<b>BELDEN BRAND NAME</b>		
5000	BLD 1583A	CAT5E DATATWIST FIVE CABLE, NON-PLENUM (FT)	
5000	BLD 1585A	CAT5E DATATWIST FIVE CABLE, PLENUM (FT)	
	<b>ORTRONICS BRAND NAME</b>		
10	ORTRONICS 808004389	24 PORT TELCO PATCH PANEL	
	<b>MISCELLANEOUS</b>		
20		.75" RIGID ALUM 90 BEND	
200		.75" RIGID ALUM CONDUIT (FT)	
20		.75" RIGID ALUM CONDUIT COUPLING	
500		1" NON-PLENUM INDOOR INNERDUCT (FT)	
500		1" PLENUM INDOOR INNERDUCT (FT)	
500		1" OUTDOOR INNERDUCT (FT)	
1000		1" RIGID ALUM CONDUIT (FT)	
75		1" RIGID ALUM CONDUIT 90 BEND	
100		1" RIGID ALUM CONDUIT COUPLING	
10		1.5" RIGID ALUM 90 BEND	
275		1.5" RIGID ALUM CONDUIT (FT)	
10		1.5" RIGID ALUM CONDUIT COUPLING	
100		3/8" RIGID ALLTHREAD (FT)	
100		1/4" ALLTHREAD (FT)	
10		2" 90 DEGREE BEND	
50		2" PVC-SCH 80 (FT)	
50		2" RIGID ALUM CONDUIT (FT)	
10		2" RIGID ALUM CONDUIT 90 BEND	
10		2" SLEEVE	
10		489ACCI-50 STUB/110 PROTECTOR PANEL	
10		66M1-50 CB, TELCO 66 PUNCH DOWN BLOCK	
10		8"X4"X3/4" FIRE RATED PLY	
10		89B-STAND OFF BRACKET FOR 66 BLOCK	
2000		E-005024AAC, 50PAIR TELCO CABLE (FT)	
3000		RG6 NON-PLENUM COAX (FT)	

**\*\* EXHIBIT A \*\***

**INSURANCE REQUIREMENTS FOR CONTRACTORS**

Contractor shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, his agents, representatives, employees or subcontractors. The cost of such insurance shall be included in the Contractor's bid.

**A. MINIMUM SCOPE OF INSURANCE**

Coverage shall be at least as broad as:

1. Insurance Services Office form number GL 0002 (Ed. 1/73) covering Comprehensive General Liability and Insurance Services Office form number GL 0404 covering Broad Form Comprehensive General Liability; or Insurance Services Office Commercial General Liability coverage ("occurrence" form CG 0001). "Claims Made" form is unacceptable. The "occurrence form" shall not have a "sunset clause."
2. Insurance Services Office form number CA 0001 (Ed. 1/78) covering Automobile Liability and endorsement CA 0025 or CA 0001 12 90. The policy shall provide coverage for owned, hired, and non-owned coverage. If an automobile is to be utilized in the execution of this contract, and the vendor/contractor does not own a vehicle, then proof of hired and non-owned coverage is sufficient.
3. Workers' Compensation insurance as required by the Labor Code of the State of Louisiana, including Employers Liability insurance.

**B. MINIMUM LIMITS OF INSURANCE**

Contractor shall maintain limits no less than:

1. Commercial General Liability: \$1,000,000 combined single limit per occurrence for bodily injury, personal injury and property damage.
2. Automobile Liability: \$1,000,000 combined single limit per accident, for bodily injury and property damage.
3. Workers Compensation and Employers Liability: Workers' Compensation limits as required by the Labor Code of the State of Louisiana and Employers Liability coverage. Exception: Employers liability limit is to be \$1,000,000 when work is to be over water and involves maritime exposure.

**C. DEDUCTIBLES AND SELF-INSURED RETENTIONS**

Any deductibles or self-insured retentions must be declared to and approved by the Agency. At the option of the Agency, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the Agency, its officers, officials, employees and volunteers; or the Contractor shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.



EXHIBIT A - Continued

G. SUBCONTRACTORS

Contractor shall include all subcontractors as insureds under its policies or shall furnish separate certificates for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein.

**\*\* EXHIBIT D \*\***

**INDEMNIFICATION AGREEMENT**

The \_\_\_\_\_ agrees to protect, defend, indemnify, save, and hold harmless  
Contractor/Subcontractor/Lessee/Supplier

the State of Louisiana, all State Departments, Agencies, Boards and Commissions, its officers, agents, servants and employees, including volunteers, from and against any and all claims, demands, expense and liability arising out of injury or death to any person or the damage, loss or destruction of any property which may occur or in any way grow out of any act or omission of \_\_\_\_\_, its agents, servants, and  
Contractor/Subcontractor/Lessee/Supplier

employees, or any and all costs, expense and/or attorney fees incurred by  
\_\_\_\_\_ as a result of any claim, demands, and/or causes of action except  
Contractor/Subcontractor/Lessee/Supplier

those claims, demands, and/or causes of action arising out of the negligence of the State of Louisiana, all State Departments, Agencies, Boards, Commissions, its agents, representatives, and/or employees.  
\_\_\_\_\_ agrees to investigate, handle, respond to, provide defense for and  
Contractor/Subcontractor/Lessee/Supplier

defend any such claims, demand, or suit at its sole expense and agrees to bear all other costs and expenses related thereto, even if it (claims, etc.) is groundless, false or fraudulent.

Accepted by \_\_\_\_\_  
Company Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

Date Accepted \_\_\_\_\_

Is Certificate of Insurance Attached? \_\_\_\_ Yes \_\_\_\_ No

Contract No. \_\_\_\_\_ for \_\_\_\_\_  
State Agency Number and Name

PURPOSE OF CONTRACT: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## **DOCUMENTATION CHECKLIST FOR BID #000332**

### **VENDOR MUST PROVIDE DOCUMENTATION WITH BID SUBMITTAL**

- 1.) PROVIDE FEDERAL OR STATE TAX FORMS OR OCCUPATIONAL LICENSES  
*REFER TO INVITATION TO BID, "GENERAL", PAGE 4*
- 2.) PROVIDE DOCUMENTATION THAT VENDOR IS A LICENSED  
COMMERCIAL CONTRACTOR IN THE STATE OF LOUISIANA WITH THE  
REQUESTED SPECIALTIES. – *REFER TO INVITATION TO BID, "GENERAL" PAGE  
4*
- 3.) PROVIDE EMPLOYEES RCDD CERTIFICATE. – *REFER TO INVITATION TO  
BID, "GENERAL" PAGE 4*
- 4.) PROVIDE LETTERS OF CONTRACTOR'S FACTORY AUTHORIZATION AND  
TECHNICAN CERTIFICATION. – *REFER TO INVITATION TO BID, "GENERAL"  
PAGE 5*
- 5.) PROVIDE A LIST OF FOUR CLIENT NAMES AND CONTACT INFO TO  
VERIFY THAT CONTRACTOR HAS INSTALLED TELECOMMUNICATIONS AND  
DATA LOW VOLTAGE WIRING PROJECTS IN THE LAST TWO YEARS. – *REFER  
TO INVITATION TO BID, "GENERAL" PAGE 5*
- 6.) PROVIDE A COPY OF CALIBRATION CERTIFICATE –*REFER TO INVITATION  
TO BID, "GENERAL" PAGE 5*
- 7.) PROVIDE COPIES OF STATE LICENSES – *REFER TO INVITATION TO BID,  
"GENERAL" PAGE 5*
- 8.) PROVIDE DOCUMENTATION ON THE NAMES, EXPERIENCE AND  
CERTIFICATIONS OF ALL EMPLOYEES THAT WILL SERVICE LSUHSC. –  
*REFER TO INVITATION TO BID, "GENERAL" PAGE 6*
- 9.) PROVIDE A SIGNED COPY OF EXHIBIT A & D (ATTACHED) – *REFER TO  
INVITATION TO BID, "GENERAL" PAGE 7*
- 10.) PROVIDE FOUR REFERENCES - *REFER TO INVITATION TO BID, "BASE  
BID", PAGE 9 #25*
- 11.) SIGNATURE PAGE OF INVITATION TO BID #000332, SIGNED BY AN  
AUTHORIZED BIDDER.